

RAPID FIELDING: CASE STUDY CONCERNING THE FIELDING
OF THE MULTIPLE-LAUNCH ROCKET SYSTEM M270A1
TO 2D BATTALION, 4TH FIELD ARTILLERY,
FORT SILL, OKLAHOMA

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General Studies

by

EVANGELINE M. SAIZ, MAJ, UNITED STATES ARMY
B.A., Gonzaga University, Spokane, Washington, 1988

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Author: Major Evangeline M. Saiz

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Approved by:

Lieutenant Colonel Betsey A. Riester, M.S.

Thesis Committee Chair

James B. Martin, Ph.D.

, Member

Mr. Charles S. Soby, M.B.A.

, Member

Accepted this 16th day of June 2006 by:

Robert F. Baumann, Ph.D.

, Director, Graduate Degree Programs

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

RAPID FIELDING: CASE STUDY CONCERNING THE FIELDING OF THE MULTIPLE-LAUNCH ROCKET SYSTEM M270A1 TO 2D BATTALION, 4TH FIELD ARTILLERY, FORT SILL, OKLAHOMA, by Major Evangeline M. Saiz, 88 pages.

The United States Army Transformation focal point centers upon the processes by which to make its military power more responsive and lethal over the next decade. This case study investigates one aspect of Army Transformation, accelerated fielding, to determine whether the Army's materiel fielding program properly supports rapidly fielding of essential major combat systems during contingency operations. This thesis begins with an examination of the acquisition process, the governing federal mandates and Department of Defense regulations as the motivation and starting point to begin understanding acquisition and provide a summary of its development. This evolves into a more-detailed discussion of some of the milestone development process, evolution into Army acquisition and total package fielding and placement of the Multiple Launch Rocket System case study within the acquisition framework. Literary review briefly details rapid fielding and the proper placement of Rapid Fielding Initiatives within context and explains the terms evolution and current "quick fix" initiatives to rush much needed equipment onto the battlefield. The remainder of the case study is concerned with the fielding of the M270A1 and continues into analysis that details the development of the M270A1. The study further reveals the associated challenges of zero notice accelerated fielding and the trials 2-4 FA went through to properly field, train to proficiency, then transition from fielding to begin preparing to deploy for combat operations.

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This case study is a case review of a project started back in 2002 while assigned as the Brigade S4 officer for 214th Field Artillery Brigade, Fort Sill, Oklahoma. The problem focuses upon an accelerated fielding of the multiple-launch rocket system (M270A1) to an artillery battalion at Fort Sill. This process has been possible only by the valuable input from the past commander and key individuals involved in the acquisition and equipment-fielding process across the country. Please send any comments or review to MAJ Evangeline M. Saiz at email: evangeline.saiz@us.army.mil. Your comments contribute to a career-long undertaking of professional development.

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ACRONYMS

AAR	After-Action Review
AFOM	Army Tactical Family of Munitions
AFAR	Army Federal Acquisition Reform
ALMC	Army Logistics Management College
AMC	Army Materiel Command
AOR	Area of Responsibility
AR	Army Regulation
AS	Acquisition Strategy
ASIOE	Associated Support Items of Equipment
ATACMS	Army Tactical Missile System
ATR	Army Transformation Roadmap
BCA	Business Cost Analysis
BOIP	Basis of Issue Plan
BDE	Brigade
BCT	Brigade Combat Team
BN	Battalion
COE	Contemporary Operating Environment
COL	Army Colonel
CVC	Combat Vehicle Crewman
CSS	Combat Service Support
DAMPL	Department of the Army Master Priority Listing
DA PAM	Department of the Army Pamphlet
DAS	Defense Acquisition System

DAU	Defense Acquisition University
DoD	Department of Defense
DoDD	Department of Defense Directive
DS	Direct Support
ERC	Equipment Readiness Code
ESIT	Extended System Integrated Test
FA	Field Artillery
FAR	Federal Acquisition Regulation
FC	Fielding Command
FM	Field Manual
FP	Force Package
FCP	Fire Control Panel
FCS	Future Combat System
FORSCOM	Forces Command
FUED	First Unit Equipped Date
GC	Gaining Command
HIMARS	High Mobility Artillery Rocket System
IETM	Interactive Electronic Technical Manual
IOT	Initial Operating Test
IOT&E	Initial Operating Test and Evaluation
ILS	Integrated Logistics Support
IPT	Integrated Product Team
JRAC	Joint Rapid Acquisition Cell
LIN	Line Item Number
LLM	Launcher Loader Module

LM	Lockheed Martin
LOGSA	Logistics Support Activity
LTC	Army Lieutenant Colonel
MACOM	Major Command
MAJ	Army Major
MFOM	MLRS Family of Munitions
MG	Army Major General
MLRS	Multiple Launch Rocket System
MON	Memorandum of Notification
MR	Materiel Release
MRRB	Materiel Release Review Board
MSC	Major Subordinate Command
NBC	Nuclear Biological Chemical
NDS	National Defense Strategy
NET	New Equipment Training
NLOS	Non-Line of Sight Cannon
NSS	National Security Strategy
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMA	Operations and Maintenance, Army
PEO	Program Executive Office
PM	Program Manager
QDR	Quadrennial Defense Review
RFI	Rapid Fielding Initiative
REF	Rapid Equipping Force

TAFS	Total Army Fielding System
TPF	Total Package Fielding
UMR	Urgent Materiel Release

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CHAPTER 1

INTRODUCTION

Transformation Challenge

Hasty deployment of specialized equipment to forces under fire in Iraq and Afghanistan saved the day more than once for Army troops. . . . The Army has fielded nearly 220 technologies both in Iraq and Afghanistan . . . and was able to purchase and deploy these items in relatively short time by skirting procurement bureaucracy and, instead, relying on so-called “rapid fielding” organizations. Many of these new technologies, however, were sent to war in such a hurry that the Army didn’t arrange support services usually associated with military systems, such as technical manuals and instructions on how to obtain spare parts.¹

Sandra Irwin

Rapid Fielding

The United States Army must be able to rapidly deploy technology in support of combatant commanders’ war plans and conduct full spectrum operations. As such, the Army is evaluated on the ability to “Provide necessary forces and capabilities to Combatant Commanders in support of the National Security and Defense Strategies.” That is, provide the combatant commander with “combat ready” organizations to execute directed missions.² In order to accomplish these tasks, the United States Army must employ the most technologically advanced weapons systems available immediately; and truthfully, the notion is not new, as from the beginning of warfare, armies have placed greater emphasis on transforming and streamlining the equipping processes to remain dominant on the battlefield. Clausewitz writes:

The necessity of fighting very soon led men to special inventions to turn the advantage in it in their own favor: in consequence of these, the mode of fighting has undergone great alterations the inventions have been from the first

weapons and equipments for the individual combatants. These have to be provided and the use of them learnt before war begins.³

Taking the lead from Clausewitz, rapid fielding of major combat systems such as the multiple launch rocket system (MLRS-M270A1) and the Stryker demonstrates the US Army's ability to support strategic and operational requirements in that acquisition flexibly permits accelerating the fielding of combat systems in response to operational commitments. For example, the current effort in the acquisition community to support the War on Terrorism is to develop and rapidly field and equip Soldiers with the latest combat gear such as the advanced combat helmet, improved Kevlar protection gear, and interceptor body armor. This effort, entitled Rapid Fielding Initiative (RFI), was a quicker response than the normal fielding process and formed to help the Army deal with the urgent operational and tactical needs on the battlefield. According to the Honorable Claude M. Bolton Jr., Assistant Secretary of the Army, Acquisition, Logistics and Technology in his testimony before the US House of Representatives:

The attacks of September 11, 2001, and the Afghanistan and Iraqi campaigns, accelerated the Army's transformation efforts, which had been proceeding in earnest since 1999. . . . As an Army we are at war, in October 2002, the Army began issuing Soldiers and units new equipment through the Rapid Fielding Initiative (RFI) Program. The RFI leverages programs and commercial-off-the shelf technology to provide Soldiers, squads, and platoons with necessary items of equipment. . . .⁴

To facilitate RFI, the Army created the Rapid Equipping Force (REF) to work hand-in hand with unit commanders, Army project managers, program executive officers, and private sector contractors to address materiel requirements. Since April 2005, this task force has addressed and met operational needs and requirements with over 220 technologies and helped over 307,000 soldiers worldwide.

The REF is an organization that takes its operational guidance from the G-3 and reports directly to the Vice Chief of Staff of the Army. It has a broad mission to rapidly increase mission capability while reducing risk to Soldiers and others. REF provides operational commanders with off-the-shelf (government or commercial) solutions or near-term developmental items that can be researched, developed and acquired quickly. REF also provides future force technology solutions that our engaged and deploying forces require. It does this by developing, testing, and evaluating key technologies and systems under operational conditions.⁵

Conversely, despite the military's greatest intentions oftentimes the most critical steps in the fielding process are too often ignored--namely logistics, training, and support plans. According to National Defense, there is growing concern with the logistics supportability (training, maintenance, and accounting) of the rising amount of RFI equipment out in the field. "Many of these new technologies were sent to war in such a hurry that the Army failed to arrange the support services usually associated with military systems."⁶

The foundations of accelerated fielding is the "just doing" of supporting the National Security Strategy (NSS) and preparing the nation for war. As such, decision makers visualizing the campaign battle plan must have the level of flexibility within the Army to make decisions concerning advancing the best technology to the battlefield. Given input as to what technology is available to meet war objectives, program managers owe feedback at what level they can support decision makers given the development, procurement, and milestone or test stage of a potentially available combat systems (for example, the Future Combat System). While the Army continues its unrelenting tenacity and efforts to expedite the best weaponry and war fighting materiel there exists at some conscious level the tendency to do just enough, "quick fixes," and send the equipment out the door in support of deployment.

A specific case in accelerated or rapid fielding is the modified version of the MLRS from Fort Sill, Oklahoma. The 2d Battalion 4th Field Artillery (2-4 FA) received an advanced fielding of this enhanced combat system and deployed nineteen launchers (eighteen combat vehicles and one operational float) to theater in support of Iraqi Freedom in January 2003.

This thesis will examine the current state of the Army's materiel fielding program and will seek to answer the primary question of whether the current Army materiel fielding doctrine properly supports rapidly fielding of essential major combat systems during contingency operations.

The scope of the work and objectives are as follows:

1. What are the basic steps of the materiel fielding process and is there is a separate process for critical combat systems such as the MLRS, Stryker and M1?
2. Does the Army prescribe critical steps in the rapid fielding process and benchmark them to safeguard against improper fielding? Secondly, determine if the expedited process asks the tactical commander to accept risks.
3. Was the fielding case for 2-4 FA indicative of standard fielding procedures of Army Regulation 700-142? Explore the fielding process for 2-4 FA and examine what fielding portions, if any, were expedited in efforts to deploy the unit to combat. Determine if the fielding process for 2-4 FA placed any constraints on the unit.
4. Why was 2-4 FA fielded the MLRS out of Department of the Army Master Priority Listing (DAMPL)?

As the reader will note, this case study has gone through significant evolution over time based on research, analysis, and ongoing dialogue. The focus over the course of

this project may lend opinions on and analysis of terms described as Total Package Fielding (TPF), Rapid Fielding Initiatives (RFI), and Rapid Equipping Forces (REF) however, the general scope of assessing rapid fielding has remained the general focus and driver for this case study.

Assumptions

1. The *National Security* and *Military Strategies* remain unchanged and serve as the basic underpinnings for military transformation as outlined in the *Army Campaign Plan*.

2. The United States Department of Defense (DoD) continues to modernize and field new equipment to the military.

3. United States military continues to field combat systems in response to contingency operations.

Qualifications

As a seventeen-year multifunctional logistician, serving in the operations career field, this officer is familiar with materiel fielding, having participated in two fielding projects at Fort Sill, Oklahoma. Qualifications also include commanding a direct support heavy maintenance company in the 2d Infantry Division, combat developments staff logistician responsible for writing logistics support for the Crusader project, and various brigade and battalion staff positions, including a combat tour supporting Operation Iraqi Freedom serving as Brigade S4 Officer for 214th Field Artillery Brigade (parent unit for 2-4 FA).

Context

The context of this case study will examine the historical framework of the 2-4 FA accelerated fielding of the M270A1 before deploying to Iraq. Additionally, this case study extends to a historical case of the Stryker total package fielding as a case for comparison against the standard fielding process.

Limitations

Time constraints limit this case study to the basics of materiel fielding and the rapid fielding procedures as applied in equipment distribution planning and execution. This research does not make an effort to research the materiel acquisition or equipment development processes. Secondly, researching the 2-4 FA Direct Support (DS) maintenance history may prove troublesome, as key players are unavailable because the Battalion Commander for the 19th Maintenance Battalion, LTC Rocky Baragona, was killed in action (Iraq) and the Support Operations Officer, British Major John White, is unavailable for input.

Delimitations

In order to constrain the scope of this study, the limits of this inquiry are constrained to major combat systems fielded to the DoD to include the specific case of 2-4 FA. The scope primarily focuses on the suitability of materiel fielding and the associated processes aligned with rapid fielding. As such, major combat systems represent those systems highlighted as the focal point of this case study.

Significance of Study

This case study examines the military approaches to rapid fielding and the decision processes involved at unit level to rapidly field combat systems and deploy to combat. At best, the basic thrust of this study is to introduce, explore and progressively define potential irregularities associated with accelerated fielding as related to the training and logistics preparation of the fielded system for deployment. This reference as applied to the specific case of 2-4 FA endeavors to understand the fielding process as applied to the case and then compare and contrast it against available historical Stryker fielding cases. Additionally, this case study seeks to understand the associated planning considerations involved as 2-4 FA fielded the MLRS and began preparing for deployment. The results of this study should provide valuable insight and recommendations into the materiel fielding processes of major combat systems as it relates to contingency operations.

Summary and Conclusion

The motivation and goals of this case study are to discover the protocols unit commanders and smaller units adapt (“Protocol” in this reference is meant as the tasks actually performed) in response to accelerated fielding and deployment timelines. The essential nature of chapter 1 is to provide background information, purpose, and study objectives regarding defining the nature of rapid fielding. Secondly, the chapter continues into a brief discussion regarding the issues associated with deploying newly fielded combat systems, specifically to 2-4 FA, then outlines the goals and objectives of this case study project. Chapter 1 further details the primary question regarding materiel fielding and outlines the supporting secondary questions regarding the case study on 2-4 FA.

Chapter 2 is dedicated to developing a coherent body of knowledge that describes the founding principles of acquisition, Army directives governing acquisition, describe Army total package fielding, and the accelerated fielding processes in order to provide fundamental insights into Army fielding process. Secondly, literary review endeavors to describe the accelerated fielding process and set the conditions to decipher whether the process is sufficient for fielding combat systems under tight constraints--contingencies and deployment. Per Army regulation, total package fielding serves as the backbone for materiel fielding; however, when speed and necessity drive requirements regulation provides a provision entitled Urgent Materiel Release (UMR). Consequently, it is from this expression pertaining to early materiel release from development that rapid fielding has its origins. Therefore, although rapid fielding serves as the basis for and drives the entire case study it is proper to define up front where rapid fielding gets its origin. Despite popular and frequent use of the term “rapid fielding,” it is not an option in the regulation, but an outgrowth from regulation pertaining to UMR and the overall materiel release process.

The literature significance enclosed in chapter 2 provides further analysis and details what other work on the subject of rapid fielding being done to supplement this research and delves somewhat into RFI and efforts applied to accelerate small, soldier survivability type, equipment. Review of professional journals, articles, and professional writings enabling the ability to capitalize upon some of the lessons learned from those cases of accelerated fielding and potential disparities that existed with that particular process. The review of work performed on the subject of rapid fielding collectively

identifies professional commentary, observations and recommendations that together provide the starting point for integration into materiel fielding regulations and doctrine.

¹Sandra Irwin, “Technologies Rushed to War: And then what?,” 1 [article on-line] available from http://nationaldefensemagazine.org/issues/2005/Apr/UF-Technologies_Rushed.htm; Internet; accessed January 2006.

²LTC Betsey Riester, F100, Changing the Army (CGSOC Course, Army Command General Staff College, Fort Leavenworth, KS, 1 August 2005), 5.

³Carl von Clausewitz, “On the Theory of War,” in *On War*, Chapter 1, Branches of War, 1 [article on-line] available from http://www.clausewitz.com/CWZHOME/On_War/BK2ch01.html; Internet; accessed 23 January 2006.

⁴Congress, House of Representatives, Tactical Air and Land Forces Subcommittee, *On the Army Modular Force, Current Force Protection Program Initiatives, and Other Major Ground Component Acquisition Programs*, 109th Cong., 1st sess., 16 March 2005 [testimony on-line] available from <http://www.house.gov/hasc/testimony/109thcongress.htm>; Internet; accessed 31 January 2006.

⁵US Army, FM 1, *The Army* (Washington, DC: Headquarters Department of the Army, June 2004) chapter 4, para 4-20 [document on-line]; available from <http://www.army.mil/fm1/>; Internet; accessed 24 January 2006.

⁶*Ibid.*, para 4-21.

CHAPTER 2

LITERATURE REVIEW

Transformation Planning Guidance

September 11th taught us that the future holds many unknown dangers and that we fail to prepare for them at our own peril. Future threats may come from terrorists, but they also could be in the form of a cyber-war, a traditional state-on-state conflict or something entirely different. As we prepare for the future, we must think differently and develop the kinds of forces and capabilities that can adapt quickly to new challenges and to unexpected circumstances. We must promote an entrepreneurial approach to developing military capabilities, one that encourages people to be proactive, not reactive, and anticipates threats before they emerge. There will be no moment at which the Department is “transformed.” Rather, we are building a culture of continual transformation, so that our armed forces are always several steps ahead of any potential adversaries. To do so, we must envision and invest in the future today, so we can defend our homeland and our freedoms tomorrow.¹

Donald Rumsfeld

Background

To reiterate, the focus of this case study is to examine the materiel fielding process and the associated efforts applied to accelerated fielding when units are preparing for deployment. The case study uses the specific situation of 2-4 FA and the STRYKER system as examples of units that fielded major combat systems since 11 September 2001. This chapter is organized primarily to provide an overview of the range of organizations involved in the acquisition process. Secondly, translate those organizations into Army acquisition process and develop a foundation for describing the set of laws governing materiel fielding. Thirdly, narrow focus to materiel fielding, focusing on the development of urgent materiel release into rapid fielding and then supplementing findings with

articles and opinions provided on the subject of rapid fielding initiatives. Taken together this literature review provides background familiarization to become acquainted with the concepts of acquisition, materiel fielding and accelerated fielding processes in order to provide the necessary constructs that influence the goals of this project. Additionally, this project will also provide insight on other work done on materiel fielding as well as lessons learned from collective experience.

Research for this case incorporated an Internet centric top-down methodology as an approach that began with the federal government's mind-set pertaining to the War on Terrorism and Transformation as discussed in documents such as the *National Security Strategy*, *National Defense Strategy* and as recent as the *2005 Army Posture Statement and Quadrennial Defense Review*. These stated objectives as declared and outlined categorically affirm that America must transform to meet new and emerging global challenges.

Army Transformation is about changing the way we fight. The bombing of the World Trade Centers and the Pentagon served as swift wake-up call that today conflict is no longer about the Cold War (USSR) lineal methods of war fighting; but a more global and complex asymmetric full spectrum combat environment. "The U.S. military predominates in the world in *traditional* forms of warfare. Potential adversaries accordingly shift away from challenging the United States through *traditional* military action and adopt asymmetric capabilities and methods."² As a result, to support the transformation mandate federal acquisition and the logistics community has a considerably large portion of the conversion. The logistics approach to supporting combat is to become lighter, more agile and strategically responsive to war fighting requirements.

Requirements ought to take days instead of years to develop and should be available from factory to foxhole without large delays and logistics stockpiling. Therefore, it is important to for this case study to get at the fundamentals of acquisition and determine essential procurement requirements beginning with Federal Acquisition Regulation, *US Code* and Department of Defense Directives.

Federal Acquisition Regulation, *US Code* and Department of Defense Directives provide foundation groundwork for the regulatory oversight and management pertaining to the acquisition process. Secondly, the approach seeks to crosswalk the Federal mandates down to Department of the Army interpretations, regulations and agencies designed to govern Army acquisition. Lastly, apply the entire model to the specific case of the MLRS fielding of 2-4 FA and set about resolving the question regarding accelerated fielding.

To achieve the process of answering the primary question, most of the research was conducted using DoD web sites and Internet portals dedicated to collecting logistics and support information. Focusing first on defining materiel fielding, much information was discovered through navigating various DoD sites dedicated to acquisition. The three most prominent of the numerous DoD sites devoted to acquisition and the materiel fielding process were the Logistics Support Activity (LOGSA), Army Logistics Management College (ALMC) and Defense Acquisition University. The majority of information was located in the LOGSA web portal and the Defense Acquisition University, while a significant amount of commentary and cross research was also located in periodicals such as *Military Technology*, *Army Logistician*, *Joint Quarterly*, and *National Defense* journals. Lastly, electronic mail and telephonic conversation

produced the AAR for 2-4 FA from PM Precision Fires as well as a Stryker Business Cost Analysis (BCA) from PM Stryker.

Federal Acquisition Regulation

Established April 1984, the Federal Acquisition Regulation (FAR) serves as the primary regulation used by Federal agencies for acquisition practices. The FAR is developed in accordance with the requirements of the Office of Federal Procurement Policy Act of 1974, published in the Federal Register, issued as Chapter 1 of Title 48, Code of Federal Regulations, under the direction of the Department of Defense, General Services Administration, Office of the Federal Procurement Policy and the Office of Management and Budget. The FAR provides a general statement of principles and guidelines intended for those engaged in Governmental acquisition and is divided 53 parts, each contain numerous subchapters, (each covers a separate aspect of acquisition) all with numerous contained subparts, sections, and subsections. The primary sections pertinent to this case study are contained in FAR Section 1, Subparts 1-202 (Compliance with the FAR) that details and delegates what agency has military compliance responsibilities.

Agency compliance with the FAR (see 1.304) is the responsibility of the Secretary of Defense (for the military departments and defense agencies), the Administrator of General Services (for civilian agencies other than NASA), and the Administrator of NASA (for NASA activities).³

FAR Section 12 (Acquisition of Commercial Items) detail in 6 Subparts the actions required to purchase commercial items; FAR Section 13 (Simplified Acquisition Procedures) detail in 5 subparts the procedures used with the Government Commercial Purchase card and small (micro) purchase procedures. The entire publication describes

and defines nearly all aspects acquisition and literally describes directives for a litany federal acquisition proponents and agencies. The FAR also lists the required mechanisms associated with the procurement process such as planning, cost accounting, resourcing safeguards and general solicitation practices. Overall, the FAR is prescriptive in function, detailed, yet flexible in outline permitting agencies operational latitude in order to achieve service/agency/component specific acquisition objectives.

Department of Defense Directives

The Department of Defense Directive (DoDD) 5000 series provides management over DoD procurement activities. The directive series provide program description, instruction and definition of the Defense Acquisition System and its operation. DoD Directives take their lead from the *US Code*, Title 10 (Armed Forces), Subtitle A (General Military Law), Part IV (Service, Supply, and Procurement) as well as FAR directives to manage DoD acquisition practices as stated above.

In general, *US Code* directs and defines wide-ranging procurement guidelines for the Department of Defense and describes the hierarchy required for legal, fair and equitable procurement practices necessary for procurement of military equipment. *US Code*, Title 10, Subtitle A, Part IV, Chapter 137, §2330 (Procurement of services: management structure) provides for and sanctions DoD procurement. *US Code* directs the Secretary of Defense to appoint each department (Army, Air Force, Navy and Marines) to provide service representatives that supervise and exercise management for procurement; provide single Point of Contact (POC) representation for Defense Agencies and defense components to interface on acquisition provisions; determine and outline

accountability procedures, monetary thresholds, evaluation criteria and fair practice guidelines.

The Secretary of Defense shall establish and implement a management structure for the procurement of services for the Department of Defense. The management structure shall be comparable to the management structure that applies to the procurement of products by the Department.⁴

In accordance with *US Code*, the Department of Defense published DoDD 5000.1 that describes the Defense Acquisition System (DAS) as an event and phase driven roadmap for acquisition. The DAS also incorporates models and principles that give emphasis to innovation, flexibility and affordable acquisition strategies for DoD and US Forces. DoDD Instruction 5000.2 describes the operation of DAS and provides a detailed discussion of the acquisition model, business practices and specific statutory requirements for acquisition. Finally, the Defense Acquisition Guidebook (DAG) provides the group reference to the policies and principles that govern acquisition. In general, the DODD 5000 series establish overarching principles divided into 5 categories.

1. Flexibility: Seeks methods and resources to responsively meet war fighting needs and bringing into line existing laws and regulations to support urgent situations and national security requirements.

2. Responsiveness: Makes sound and timely procurement decisions in reaction to requirements while maintaining and balancing DAS integrity and strategic objectives.

3. Innovation: Strive to continually expand and develop the acquisition process through adaptation of emergent principles and new technologies.

4. Discipline: Endeavor to apply equitable scrutiny to all prospective projects to ensure only pertinent technologies are permitted to enter development and production.

5. Effective Management: Make every effort to ensure all programs and systems systematically undergo thorough performance based review and each milestone and decision review.

DoDD 5000 series highlights demonstrates the multitiered and interactive procurement course of action modules of the DAS that contain oversight, review, contracting and logistics guidelines for preparing proposals and programs. Taken together, along with strategic guidance, *Federal Acquisition Regulation and US Code* the DoDD 5000 series serve as the framework that shapes the underpinnings of the military acquisition process. Figure 1 depicts a typical acquisition strategy process as outlined in the DoDD 5000 series.

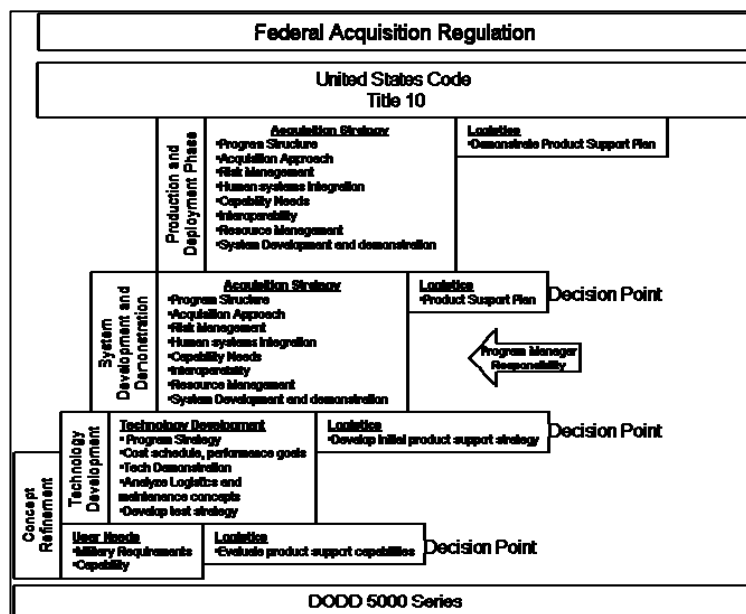


Figure 1. Defense Acquisition System Framework
Source: Department of Defense, Directive 5000.1, “The Defense Acquisition System” (Washington, DC: Department of Defense, 12 May 2003)

The DAS, structured by the Defense Acquisition Management Framework, parallels the entire roadmap and framework.

-User Needs/Technology Opportunities. Management process by which the Department of Defense provides effective, affordable, and timely systems to the users.⁵

-Concept Refinement. The first phase of the Defense Acquisition Management Framework as defined and established by DoDI 5000.2. The purpose of this phase is to refine the concept documented in the ICD and to prepare a Technology Development Strategy (TDS).⁶

-Technology Development. The second phase of the Defense Acquisition Management Framework as defined and established by DoDI 5000.2. It is initiated by a successful Milestone A decision. The purpose of this phase is to reduce technology risk and to determine the appropriate set of technologies to be integrated into the full system. This effort is normally funded only for advanced development work and does not mean that a new acquisition program has been initiated.⁷

-System Development & Demonstration. The third phase of the life cycle as defined and established by DoDI 5000.2. This phase consists of two efforts, System Integration (SI) and System Demonstration (SD), and begins after Milestone B. It also contains a Design Readiness Review (DRR) at the conclusion of the SI effort. A successful Milestone B can place the program in either SI or SD. A program planning to proceed into SD at the conclusion of SI will first undergo a DRR to confirm that the program is progressing satisfactorily during the phase.⁸

-Production and Deployment. The fourth phase of the life cycle as defined and established by DoDI 5000.2. This phase consists of two efforts: Low Rate Initial Production (LRIP) and Full Rate Production and Deployment (FRP&D) separated by a Full Rate Production Decision Review (FRPDR). It begins after a successful Milestone C review. The purpose of this phase is to achieve an operational capability that satisfies the mission need.⁹

The entire acquisition process is supervised or reviewed for suitability at the beginning (concept) through technology development and production stages. The review stages are officially termed “Milestone Decision Review” points and are critical not only the acquisition process and development but also establishes and confirms system suitability, budget appropriateness as well continued doctrinal aptness toward future

framework. Milestone and decision review assess progress and authorize continued production of the system into subsequent stages of the acquisition process. If the developed system falls behind development, surpasses budget thresholds or falls outside future doctrinal objectives the development process is halted until necessary changes are made to the system.

There are three types of decision points: milestones, decision reviews, and a design readiness review. Each decision point results in a decision to initiate, continue, modify, or terminate a project or program work effort or phase. The review associated with each decision point will typically address program progress, risk, affordability, supportability, program tradeoffs, Acquisition strategy updates, and the development of exit criteria for the next phase or effort. The type and number of decision points will be tailored to program needs.¹⁰

An example was the potential future artillery system referred to as the Crusader. This project was originally intended as a replacement to the Army 155mm self-propelled (M109A6) Paladin system; mid 2002, the Crusader was discontinued as the heavy track design failed to meet light mobile force objectives.

By early 2002, the Army had spent \$2 billion on the Crusader to date. It would take another \$9 billion to complete the program. Critics maintain the Crusader is too big and heavy for the lighter, more mobile Army of the future. . . . As defense officials worked through the fiscal 2004 Defense Planning Guidance process, some alternative technologies came to light. There were some Crusader-like technologies that evidently showed a lot of promise. It became apparent to DoD officials that proceeding with the Crusader could delay or prevent funding promising technologies that could benefit all services. Deputy Defense Secretary Paul Wolfowitz asked Army Secretary Thomas White to come back within 30 days with a plan that assumes the Crusader is canceled and invests the freed \$9 billion in other, more transformational, technologies.¹¹

This example established how the Crusader program was discontinued during system development and demonstration stages as the Crusader was beginning operational testing and decision approval to initiate the next stage of development, in this case,

permission to enter the production stage for the Crusader was denied, program terminated and monies allocated to other Army programs.

Lastly, it is important to understand that DoDD 5000 series serve as the foundation for AR 70-1, AR 700-142 and supporting publications. Nevertheless as of October 2005, Deputy Secretary of Defense issued a letter that cancelled the existing policies and issued interim guidance. The interim guidance rescinded previous policy issued since the last publication of the directive and retained a list of policy statements not rescinded but have contents included to remain in effect until completion of DoDD 5000 series revisions. Broadly, the interim guidance consists of the basic principles and guidance on the base directives as envisioned from the Federal Acquisition Regulation; however, the interim guidance rescinds some restrictions, denotes current context that prescribes stipulations for accelerated fielding, and prescribes less restrictive and more flexible government over the acquisition process.

Military Publications

Published 30 January 2004, AR 70-1, *Army Acquisition Policy*, implements the Department of Defense directive to establish and supervise an Army Acquisition program. AR 70-1 manages Army acquisition programs from development, acquisition and life-cycle management and assigns PM responsibilities; delineates Army acquisition strategy and management approaches, serves as milestone decision authority, assigns programs by Army Categories (ACAT) and serves as the general organization source document for personnel working under Army acquisition. Cornerstone to Army acquisition strategy is the core concept of Evolutionary Logistics:

Evolutionary acquisition is the preferred approach to satisfying operational needs. The objective is to balance needs and available capability with resources and to put that capability into the hands of the user quickly. To facilitate evolutionary acquisition, program managers will use appropriate enabling tools, including a modular open systems approach to ensure access to the latest technologies and products, and facilitate affordable and supportable modernization of fielded assets.¹²

Evolutionary acquisition serves as the preferred approach to determining Army requirements and serves as the continuity through the phased incremental tiered development of Federal Acquisition Regulation and Department of Defense regulatory directives. Specifically, evolutionary acquisition strategy takes a detailed step approach to technology development that considers concept development (total approach), balanced fielding (development, testing and design modification) and supportability (integrated total lifecycle). In addition, evolutionary acquisition permits the PM to enter any stage of the acquisition process with approval of the Milestone Decision Authority for the program. As such, evolutionary acquisition is the birthplace for Army accelerated and rapid fielding; accelerated development is consistent with the flexibility and responsiveness principles that recognize urgency in leveraging the best technology forward in conjunction with transformation objectives.

AR 70-1 serves as the management source that directs the acquisition process and serves as a principal launching point for the development of new Army technology. AR 70-1 additionally serves as the starting place that directs Army proponents to submit system modification requests, technology changes or requests for new war fighting equipment through Headquarters, Department of the Army as routed through the Army Requirements Oversight Council (AROC). Applicants are scrutinized for program suitability for integration into future technological doctrine; the AROC utilizes a system

of core management issues as listed in AR 70-1 that addresses full spectrum considerations such as program cost, logistics supportability and risk assessment. Upon acceptance into the acquisition program, the proposed system enters the Defense Acquisition process, assigned Army Category (ACAT); the Program Manager then develops the system acquisition strategy as outlined FAR and DoDD 5000 that serves as the master outline for research, development, test, production, fielding, modification and post-production management.¹³ The acquisition strategy is next reviewed as a capstone requirements document for presentation and concept review as depicted and described in figure 2.

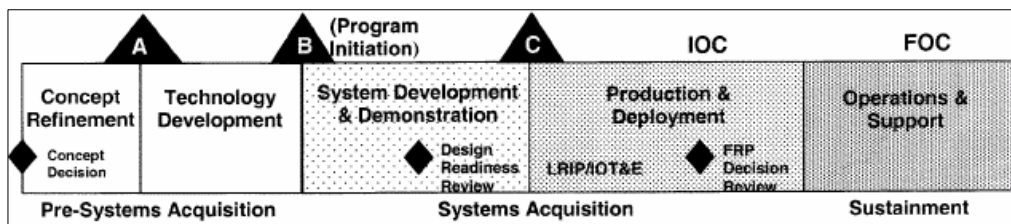


Figure 2. AR 70-1 Army Acquisition Process

Source: Defense Acquisition University, *Integrated Defense Acquisition, Technology Management Framework* (Fort Belvoir, Virginia: Defense Acquisition University, 29 August 2005), 1 [document on-line]; available from https://acc.dau.mil/simplify/ev.php?ID=79158_201&ID2=DO_TOPIC; Internet: accessed 11 February 2006.

The Army acquisition process is predicated upon the same model as described in the DoDD 5000 series. AR 70-1 describes the acquisition process as the following steps:

Concept Refinement. Described as pre-design stage of a project. User requirements are balanced against future technology/doctrine capabilities. Logistics capabilities are defined, budget analysis and lifecycle program development. The final

product because of concept refinement is an approved Initial Capabilities Document (ICD) and concept decision.

Technology Development. Described as the process of reviewing and defining the technological process and conceptual development of the system as well as periodic process of review to determine possible technology changes and confirm the system development is within cost estimates. Second to the process is development or iterative review the proposed integration of the system in to the logistics supportability structure. Consideration in technology development is interoperability with existing maintenance and supply chains. Endstate for technology development is an approved acquisition strategy; successful logistics support plan and approval to enter Milestone B.

System Development and Demonstration. Described as the process where the development of the system is measured against current logistics and operational structures. The goal for this stage of development is to review the logistics requirements of the system with regard to maintenance and repair parts lifecycle. The goal is to determine overall requirements, Basis of Issue Plan (BOIP) logistics interoperability plan to minimize strain and reduce logistics footprint. Secondly, during this stage of the process is to review user safety and environmental considerations as well as live fire and systems testing. End state is a design readiness review that verifies system functionality, safety considerations and possible environments constraints resulting in either proposed design changes and modifications; demonstration of system capabilities and approval to enter Milestone C.

Production and Deployment. Defined as the portion of development, where if there are system deficiencies or specification changes the changes must be incorporated

in production and development plan; once the system has passed operational testing, safety and logistics issues and development stages. Endstate for the system at this stage is approved consideration for two production levels as Full-Rate Production (FRP) and or Low-Rate Initial Production (LRIP). Differences in production rate often reflect budget constraints and production capabilities.

Operations and Support. Defined as the lifecycle sustainment of the acquisition process that looks at operational deployment of the system, potential upgrades as a result of feedback from the field, design modifications and safety enhancements incorporated into incremental production of the system. Operations entail incremental production of the system as appropriate to future technology and budget objectives. Additionally, this stage looks at the total lifecycle of the system, current trends, potential future failures and required improvements.

Review of AR 70-1 determines the requirements and objectives of the Army Acquisition program; the regulation outlines Army acquisition strategy goals for materiel acquisition. As previously stated, AR 70-1 serves as the management source that directs the acquisition process and serves as a principal launching and management portal for the development of future Army technology.

Published 26 July 2004, Army Regulation (AR) 70-142, *Materiel Release, Fielding, and Transfer*, provides basic instruction for the processes that field and transfer Army property to using units. The regulation prescribes Department of the Army policies, responsibilities, and administrative procedures for the Army's materiel release, fielding, and transfer process.

This regulation assigns responsibilities and prescribes policies and procedures for the Army's materiel release, fielding, and transfer processes. The materiel release process is intended to ensure that Army materiel is safe, operationally suitable, and is supportable before release for issue to users. The materiel fielding and transfer processes are intended to ensure the orderly and effective deployment and transfer of Army equipment, including all necessary logistics support requirements.¹⁴

Published 2 August 2004, Department of the Army Pamphlet (DA PAM) 700-142, *Instructions for Materiel Release, Fielding, and Transfer*, describes Total Package Fielding (TPF) as the Army's standard materiel fielding process the Army began using in 1984 and adopted as a standard fielding process in 1987. TPF is designed to provide Army materiel systems to the using units as a coordinated package of end items, support items (communications systems, radios, computers and special tools), and technical documentation as described in the evolution acquisition strategy of AR 70-1. DA PAM 700-142 explains policies, outlines procedures, and gives instructions for the fielding of Army materiel systems.

The fielding process officially begins with a materiel-fielding Memorandum of Notification (MON) from the materiel developer to the gaining Major Command (MACOM) or in this case US Army. The objectives as outlined in Chapter 1 of AR 700-142 describe the collective processes and overall goals of TPF.

Provides procedures based on policy set forth in AR 700-142. It contains instructions, formats, reporting requirements, and schedules used to carry out the policies and procedures of the Army's materiel release, fielding, and transfer processes. This information is intended to assure the necessary coordination for, and documentation of, the orderly and effective deployment and redeployment of Army equipment, including all necessary logistics support requirements.¹⁵

The most important information detailed in DA PAM 700-142 is the set of seven instructions that outline actions that must be taken in the Materiel Release (MR) process. For clarity, more in-depth and detailed processes are outlined in DA PAM 700-142 which

refer to the entire life-cycle process and milestones associated with engineering and manufacturing development stages. DA PAM 700-142, appendix B, detail materiel system fielding milestones and address milestones and developmental item fielding, fielding milestones between contract award and FUED handoff and fielding milestones for Commercial/Non developmental Item (C/NDI). C/NDI milestones refer to commercially readily available technology, like the Interceptor Body Armor and the Advanced Combat Helmet, items readily available for military procurement. These items will be described in further detail as Rapid Fielding Initiatives (RFI) later in this study.

Developmental item fielding refers to combat systems identified as significant to the Army and categorized as Army Category (ACAT) as described below. ACAT refers to Army equipment and materiel requirements listed in AR 70-1 and DoDD 5000-dollar value program value:

- ACAT I programs are major defense acquisition programs generally budgeted at more than \$2.2 billion.; ACAT I program items have two subcategories (C and D) that are governed by the Secretary of Defense and require different review authority as prescribed by AR 70-1.¹⁶
- ACAT IA programs are major automated information systems or programs.
- ACAT II programs are those programs that do not meet the criteria for an ACAT I program but are major systems.¹⁷
- ACAT III programs are programs that do not meet the criteria for an ACAT I, ACAT IA or ACAT II.¹⁸

For the purposes of this case study focuses upon ACAT I items (MLRS) as well as the materiel release process as the stepping off point for further discussion:

- Eighteen months before First Unit Equipped Date (FUED), the PM identifies a new system fielding to AMC. The Materiel Release (MR) coordinator gives the MR process briefing to the PM and begins forecasting the release.¹⁹

- Nine months before FUED the PM establishes an Integrated Product Team (IPT with the MR coordinator as a member). The sub IPT defines objectives, assigns responsibilities, establishes timelines to support the Materiel Release Review Board (MRRB), and seeks timely resolution of MR issues.²⁰
- Six months before FUED, identify full, conditional, or training release and any issues to be resolved to attain the planned type of release. Make data call to inside and outside agencies to fulfill MR prerequisites. Prepare get-well plans if release is conditional, and request user acceptance and urgency of need statement from gaining Major Command (MACOM). Prepare the summary portion of MR request package.²¹
- Two month before FUED, Send MR request to MR coordinator for review and scheduling of the MRRB.²²
- Fifty-five days before FUED, MR request is provided to MRRB members for evaluation. IPT meets weekly and documents evaluation of each MRRB member.²³
- Forty days before FUED, MRRB decisions are consolidated, and MRRB recommendation is processed. Resolution of any mistakes or misunderstandings.²⁴
- Thirty days before FUED, MSC commander provides approval.²⁵

To gain further clarity on the question of rapid fielding, during the initial stages of this case study much was revealed from reviewing Federal acquisition and DoD governing regulations on the topic of acquisition. Within the context of regulation, rapid fielding takes its structure or definition from urgent materiel release (UMR). As stated earlier, the governing regulation does not refer to rapid fielding, but rather Chapter 3 makes provision for UMR that details required actions to accelerate fielding for a commodity that decision makers deem critical. AR 700-142 describes UMR as:

Intended solely for meeting an operational need of a deployed or imminently deploying force that cannot be filled from existing Army or DoD inventories, or by any other means. Beginning 2002, the War on Terrorism changed our Contemporary Operating Environment (COE) as the Army began deploying troops to Afghanistan. Before the War on Terrorism, acquisition had been a laboriously slow process as procurement practices often took years to bring new

and advanced technology to the user. Consequently, as we began rapidly deploying troops and equipment across the globe, it became necessary to circumvent normal procurement and fielding bureaucratic processes to get equipment to the front lines.²⁶

The procedures set forth in AR 700-142 describe Army procedures designed to safely develop and procure Army systems. AR 700-142 details specific management instructions in Chapter 3, “Materiel Release for Issue”, that prescribe requirements for systems that are “safe, operational suitable, and supportable prior to materiel release.” As the regulation outlines basic prerequisites similar to those outlined in DoDD 5000 series while DA PAM 700-142 detail prescriptive materiel fielding instructions and milestones in Appendix D.

The Joint Rapid Acquisition Cell (JRAC) was created November 2004 by the Department of Defense under the supervision of Deputy Director Paul Wolfowitz to facilitate the acquisition process as an oversight group designed to help the services work through acquisition obstacles.

The Joint Rapid Acquisition Cell, formed at the direction of Deputy Defense Secretary Paul Wolfowitz, is helping break through real or perceived roadblocks that delay getting lifesaving or mission-critical items or services to the field. . . . He said the new cell could cut months--and in some cases, years--out of the acquisition timetable. . . . Some combatant commanders, as well as acquisition experts, don't realize that many legal requirements that tend to bog down military contracts don't apply during wartime. . . . Congress lifts many of these restrictions, and the focus shifts to identifying urgent operational needs, finding ways to fill them, and moving the process along as quickly as possible. . . . “Congress has given the department authority and flexibility to meet many of these needs. Yet, all too often, our organizations are reluctant to take advantage of them.”²⁷

Creation of a DoD JRAC cell only demonstrates the overall highest governmental emphasis and necessity to mitigate through bureaucratic muddle and simplify the acquisition process. Further research regarding the JRAC located two memorandums

dated fiscal year 2005 that authorized the Rapid Acquisition Authority. Enacted by Congress to mitigate combat fatalities, the Rapid Acquisition Authority provides:

This legislation permits the Secretary of Defense to waive any provision of law, policy, directive or regulation, addressing

- (A) the establishment of the requirement for the equipment;
- (B) the research, development, test, and evaluation of the equipment; or
- (C) the solicitation and selection of sources, and the award of the contract, for procurement of the equipment.

However, the Secretary may not waive any provision of law that imposes civil or criminal penalties. The Secretary will designate a senior official of the Department of Defense to ensure that the needed equipment is acquired and deployed as quickly as possible, with a goal of awarding the contract for the acquisition of equipment within 15 days. Although the Secretary is limited to only buying equipment that, in the aggregate, is not more than \$100M, each fiscal year. The Secretary may use any funds available to the Department of Defense to pay for the equipment, regardless of the color of money. The \$100M is not funding appropriated by Congress for this purpose, it is the authority to expend up to \$100M of existing DOD funding using this waiver authority.²⁸

Professional Publications and Writings

There is a large amount of professional commentary and articles regarding rapid fielding initiatives and total package fielding. In 2003, the Army Chief of Staff, General Peter J. Schoomaker, directed that all Soldiers deploying in support of Operation Iraqi Freedom and Operation Enduring Freedom receive Rapid Fielding Initiative (RFI) equipment. As a result, commodity program managers took the lead on the fielding effort and began to develop then field critical equipment through rapid-equipping forces. Program Executive Officers (PEOs) and Program Managers (PMs), more specifically PEO Soldier, gave life to “rapid fielding” in the wisdom that having ownership of the commodity and fielding timelines.

Ready or not, we are witnessing a fundamental paradigm shift from rigid, highly specified requirements to the need for adaptable capabilities to meet emerging requirements. Such a paradigm shift should lead to the rapid fielding of partial solutions that can be continuously upgraded verses the lethargic fielding of finished systems that are completely obsolete before being placed in the hands of the user.²⁹

Rapid Fielding Initiative

To accomplish General Shoemakers' directive to swiftly get equipment to the field the Army created the Rapid Fielding Initiative (RFI).

RFI is designed to modernize equipment in systematic and integrated manner. . . . What is important in the initiative, even beyond the quality of the new equipment, is the reality that this equipment is procured and deployed with the units in a manner of weeks or at the maximum months instead of years.³⁰

In the wake of Operation Enduring Freedom, the US military took advantage of ambiguity in regulations and developed a process that leapt over the broad acquisition bureaucracy. Liberal interpretation of the constraints regarding deployment timelines and most of the literature presented suggests that the concept of rapid fielding was an initiative that evolved out of necessity as the military devised workaround systems to get equipment to the field.

One of the little noticed after-effects of the Afghanistan campaign was the establishment, in early 2002, of the Rapid Fielding Initiative (RFI). This Army program recognized that American army troops did not always have the best weapons and equipment. RFI was intended to do something, and do it quickly.³¹

RFI is designed to fill Soldier and unit equipment requirements by quickly fielding commercial, off-the-shelf technology rather than waiting for standard acquisition programs to address shortages.

These programs are directly aligned with the Army's people and force transformation strategies. They reflect how the Army cares for its people and prepares units for upcoming training and deployments. They also position the Army to be more responsive to emerging threats and contingencies.³²

Soldiers receive individual equipment, such as, body armor and ballistic goggles and units receive equipment based on operational lessons learned, such as, grappling hooks and fiber-optic viewers. Soldiers and units of all components are equipped to a common standard using the rapid fielding initiative.

Summary and Conclusion

A thorough literary review of collected documentation and commentary regarding materiel fielding suggests that there is an extensive amount of information on the acquisition process. Large volumes exist regarding Federal Acquisition and Department of Defense Directives and Instruction as well as a detailed and extensive multi-tiered acquisition framework with which the entire process measures design, technological and production of future technology. One interesting element of literature review is the establishment of the rapid fielding initiative to get about promptly moving critical technological advancements and equipment through the development and acquisition process. Taking advantage of existing technology, rapid fielding initiatives seek to enter the acquisition process at Milestone C, production and deployment, to quickly go about satisfying mission requirements.

The acquisition framework demonstrates willingness to integrate flexibility and responsiveness as an organization created mostly out of lessons learned from Afghanistan and other contingency operations. While America remains a nation at war, our nation will do whatever necessary to advance the best technology forward to the battlefield not only to save lives, but also remain ahead of our adversaries and dominant on the battlefield. The Army Posture Statement of 2005 succinctly states:

America remains a nation at war, fighting our adversaries who threaten our civilization and way of life. The most significant aspect of our current reality is that the Global War on Terrorism in which we are now engaged is a protracted one. . . . We are sustaining our global commitments while making tremendous progress in our transformation. . . . To respond to the challenges presented in the era of uncertainty and unpredictability, the Army has accelerated its transformation. During times of peace, change is generally slow and deliberate – at a pace supported by limited resources. In wartime, however, change must occur faster; a measured approach to change will not work.³³

The connotation of rapid fielding is that RFI is a current evolution of military affairs (logistics) that recognizes the deliberate, slow-moving and sometimes weighted process of acquisition. The next chapter presents the research methodology used to compare literature, interviews and commentary and set the course for answering the primary question regarding 2-4 FA. The end state for research methodology seeks to present findings and set the stage for chapter 4 that imparts analysis of whether the Army is flexible enough to properly field combat systems. The baseline for this research is rooted in acquisition doctrine; as a result, the first initial data gathering activities intends to layout the standard fielding process as outlined through collected data. This process permits the design of a basic research plan that enables the development of an understandable baseline against which to compare the 2-4 FA fielding proceedings as related from Colonel Sprayberry. The intent is to establish evaluation criteria for comparison against the 2-4 FA fielding experience of the M270A1.

¹Donald Rumsfeld, Secretary of Defense, *Transformation Planning Guidance* (Washington, DC: Department of Defense, April 2003), 2.

²US Department of Defense, *National Defense Strategy* (Washington, DC, Department of Defense, March 2005), 2 [document on-line]; available from http://www.globalsecurity.org/military/library/policy/dod/nds-usa_mar2005.htm; Internet; accessed 22 February 2006.

³US Department of Defense, *Federal Acquisition Regulation*, Subpart 1.2 (Administration), 1.202 (Compliance with the FAR); [document on-line] available from http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/01.htm#P761_29061; Internet; Accessed 22 February 2006.

⁴US Congress, *US Code*, Title 10, Subtitle A, Part IV, Chapter 137, §2330 (Procurement of services: management structure); U.S. Code Collection, Cornell School of Law web site; [document on-line] available from http://www4.law.cornell.edu/uscode/html/uscode10/usc_sec_10_00002377---000-.html; Internet; Accessed 10 January 2006.

⁵Defense Acquisition University, *Integrated Defense Acquisition, Technology Management Framework* (Fort Belvoir, Virginia: Defense Acquisition University, 29 August 2005), 1 [document on-line]; available from https://acc.dau.mil/simplify/ev.php?ID=79158_201&ID2=DO_TOPIC; Internet: accessed 11 February 2006.

⁶Ibid.

⁷Ibid.

⁸Ibid.

⁹Ibid.

¹⁰US Army, AR 70-1, “Decision Points” in Army Regulation 70-1, *Army Acquisition Policy* (Washington, DC: Department of the Army, 30 January 2004), 39.

¹¹Global Security, “Crusader,” (April 2005) [article on-line Global Security Web site]; available from <http://www.globalsecurity.org/military/systems/ground/crusader.htm> Internet; accessed February 2006.

¹²US Army, AR 70-1, “Tenets of Army Acquisition” in Army Regulation 70-1, *Army Acquisition Policy* (Washington, DC: Department of the Army, 30 January 2004), 3.

¹³US Army, AR 70-1, “Support Strategy” in Army Regulation 70-1, *Army Acquisition Policy* (Washington, DC: Department of the Army, 30 January 2004), 31.

¹⁴US Army, DA PAM 700-142, *Instructions for Materiel Release, Fielding and Transfer*” (Washington, DC: Department of the Army, 1 July 2004), 16.

¹⁵Ibid.

¹⁶US Army, AR 70-1, “Categories of Acquisition Programs” in Army Regulation 70-1, *Army Acquisition Policy* (Washington, DC: Department of the Army, 30 January 2004), 30.

¹⁷ Ibid.

¹⁸Ibid.

¹⁹US Army, DA PAM 700-142, *Instructions for Materiel Release, Fielding and Transfer* (Washington, DC: Department of the Army, 1 July 2004), 42.

²⁰Ibid.

²¹Ibid.

²²Ibid.

²³Ibid.

²⁴Ibid.

²⁵Ibid.

²⁶US Army, AR 700-142, *Instructions for Materiel Release and Transfer* (Washington, DC: Department of the Army, 1 July 2004), 14.

²⁷Armed Forces Information Service, *Acquisition Cell to Speed Up Responses to Urgent Warfighter Needs* (Washington, DC: Department of Defense, 24 November 2004), 1 [document on-line]; available from http://www.dod.mil/news/Nov2004/n11242004_2004112405.html; Internet; accessed 11 February 2006.

²⁸Defense Acquisition University, *What Exactly Is Rapid Acquisition Authority?* (Fort Belvoir, Virginia: Defense Acquisition university, 29 July 2005), 1 [document on-line]; available from https://acc.dau.mil/simplify/ev.php?ID=79158_201&ID2=DO_TOPIC; Internet: accessed 11 February 2006.

²⁹CW4 Clifford N. Cox. "Meeting the Training Needs of Tomorrow's War Fighters Through High Level Acquisition (HLAq) Strategies," Paper No. 1659: paper presented Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC) 2004, 3 [document on-line]; available from http://www.iitec.org/documents/P_1659.pdf; Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC) 2004 Internet; accessed 10 January 2006.

³⁰Peter Schoomaker, US Army Chief of Staff, "Answering the Call to Duty - The Rapid Fielding Initiative," 2 October 2005, 26 [document on-line]; available from: <http://www.ausa.org/pdfdocs/GB/GBSchoomaker.pdf>; accessed 23 January 2006.

³¹James Dunnigan, "The Right Stuff at the Right Time," Strategy Page, 1 [document on-line]; available from: <http://www.strategypage.com/dls/articles/20422.asp>; Internet; accessed 11 January 2006.

³²US Army, FM 1, *The Army* (Washington, DC: Headquarters, Department of the Army, June 2004), 1 [document on-line]; available from <http://www.army.mil/fm1/>; Internet; accessed 24 January 2006.

³³Chief of Staff, United States Army, *Army Posture Statement 2005, Mission: Supporting the National Security and Defense Strategies* (Alexandria, Virginia: United States Army, 6 February 2005), 1 [document on-line]; available from <http://www.army.mil/aps/05/>; Internet; accessed 23 January 2006.

CHAPTER 3

RESEARCH METHODOLOGY

The Art of War

Among the many interesting objects which will engage your attention, that of providing for the common defense will merit particular regard. To be prepared for war is one of the most effectual means of preserving peace. A free people ought not only to be armed but disciplined; to which end a uniform and well digested plan is requisite: And their safety and interest require that they should promote such manufactories, as tend to render them independent on others, for essential, particularly for military supplies. The proper establishment of the troops which may be deemed indispensable, will be entitled to mature consideration. In the arrangement, which will be made respecting it, it will be of importance to conciliate the comfortable support of the officers and soldiers with a due regard to economy.

George Washington

Research Methodology

Primary data collection efforts for this chapter will be to establish the foundations for research and root this case study methodology in *National Security Strategy*, acquisition directives, Army materiel-fielding regulation and AARs to determine a reference standard for the accelerated materiel fielding process. Accordingly, the step to beginning the research is to examine the pertinent regulations governing acquisition and determine an overall relationship. Specifically focusing on the case study, the first initial data gathering seeks to demonstrate and layout the standard fielding process as outlined by regulation. This process permits the design of a basic research plan that enables the development of a clear standard against which to compare any materiel fielding. The intent here is to establish baseline evaluation criteria in advance of comparison against the fielding experience of the M270A1 case of 2-4 FA.

Consequential to this case study is the objective to answer whether the Army is flexible enough to properly and safely field combat systems during wartime. As the Army Posture Statement 2005, devoting a chapter to focusing resources stated:

The Army benefited from three major decisions in 2004, all providing resources to address immediate wartime needs. The Army restructured or adjusted 126 programs. First, the Army cancelled the Comanche Program and reinvested the savings into other urgent aviation requirements. . . . Second, we modified the schedule for fielding Future Combat Systems to put better capabilities into the hands of our fighting soldiers. Third, Congress provided the authority to increase Active Component end strength by 30,000 to support the war and the Army's conversion to modular formations.²

Screening Criteria

Screening criteria applied in this case included currency of information. Simply speaking, the opinions and professional discourse applied to acquisition before 2001 was screened from consideration. Credibility of sources was also a factor in that US government documents, DoD and Department of the Army sources from LOGSA, ALMC, and Defense Acquisition University were weighted heavily as credible subject matter expert sources on the subject of acquisition and federal procurement practices. Professional and journalistic discourse were lightly weighted and used in conjunction with credible sources as corroboration in discussion.

The Process

The acquisition process is a complex multi-tiered/dimensional process used to produce and develop DoD systems. The reality of materiel fielding is an on-going program that is quickly evolving even with the developing nature of the War on Terrorism and in actuality because of it. Invariably, since beginning in Bosnia and the mountains of Afghanistan, battlefield conditions indeed have changed as efforts to

eliminate Al Qaeda, potential civil unrest in Iraq and future unknown conflicts in potential areas as Iran and North Korea. Heavy and drawn out materiel fielding plans are quickly becoming an object of the past, even the Future Combat System program has accelerated development to meet future technology requirements called for by Army transformation.

As a result, this research methodology focuses upon the precedence that has taken center stage and sets upon the course to examine the changes of materiel fielding. As such, it is necessary to interview key individuals and review actual AARs of completed fielding projects to gain firsthand perspective of ongoing efforts in accelerated fielding.

Interview Plan

To gain perspective on the fielding of 2-4 FA the number of interviews will be conducted and narrowed to the key actors involved with the 2-4 FA fielding; former Commander, 2-4 FA, Colonel Sprayberry, and LTC Keith Bean former Executive officer for 2-4 FA. The goal is to obtain a broad understanding and to gain his feedback on the successes and or failures of the accelerated fielding. Although the number of interviews is extremely low from a statistical perspective, the scope is dealing with subject matter experts. Most concerned have exceptionally good recall of events, each identifying particular events down to date and time which may be cross referenced against AARs and other archive data.

Question Format

Directly related to the MLRS fielding of 2-4 FA, interview questions were asked of the former commander, Colonel Billy Sprayberry and former Executive Officer,

Lieutenant Colonel Keith Bean. The goal of the questions posed were to gain insight into the nature of the accelerated fielding and determine if there were any constraints or limitations placed as a result of the accelerated plan. The question structure were general in nature and designed to see if there was impact directly or indirectly experienced as a result of the MLRS fielding. (Fielding changed training plans, unit operations, or organization):

1. Briefly describe how your unit was notified of the intent to field the improved MLRS? (Supports question: Why 2-4 FA was fielded out of DAMPL?)
2. When were you notified your unit was going to deploy? (Answers secondary question: Was the fielding case for 2-4 FA indicative of standard fielding?)
3. What was the scope of the fielding timeline and how did it fit into your deployment preparations? (Answers question: Was the 2-4 Fielding complete or were any portions expedited to deploy the unit to combat. Did the fielding process place any constraints on the unit?)
4. What was the scope of the maintenance training for the MLRS? What training did your mechanics receive on the new system? (Answers the question does the Army prescribe critical steps in the rapid fielding process to safeguard against improper fielding?)
5. Was the MLRS fielding changed, scaled down or altered in any form to fit your deployment window? (Answers question: Did the fielding process for 2-4 FA place constraints on the unit?)
6. Did the MLRS improvements require significant new training? (Answers question: Did the fielding process for 2-4 FA place constraints on the unit?)

Questions on Army Regulation and After-Action Reviews

To answer secondary questions outlining the DA PAM 700-142 checklist will detail for this study the materiel fielding steps; secondly, to further the case study this research will also detail the After Action Review of the MLRS fielding for 2-4 FA and prepare side-by-side analysis to compare the steps as executed to point out what, if any, steps were omitted. The primary data collection in this effort will make extensive use of AARs and the information gathered from professional articles and commentary.

As DoDD 5000 series, AR and DA PAM 700-142 describes the typical materiel fielding process as the formal release, fielding, and transfer processes that span four stages of the life-cycle management model; described as the technical engineering and manufacturing development, production and deployment, operations and support, and disposal stage's. This begins the process to answer the primary question, which examines whether the doctrine of materiel fielding properly supports accelerated fielding of essential major combat systems or whether the rapid fielding process requires more in depth analysis to further detail and specify specific regulatory requirements for accelerated fielding. Important focus area is the evolutionary acquisition strategy that begins in the technology development stage. Key to understanding the lengthy materiel fielding process is to understand the ingredients placed into the program managers acquisition strategy as depicted in extract, Figure 3 below, from the Technology Development stage of the acquisition process.

Figure 3 depicts typical PM objectives and goals for system development. The list is not all-inclusive, but represents a reasonable and typical sample of program development goals. The acquisition strategy becomes the template application and metric

to measure development actions during the acquisition stages to measure compliance with statutory requirements in Federal Acquisition Regulation, *Title 10, US Code* and DOD 5000-series.

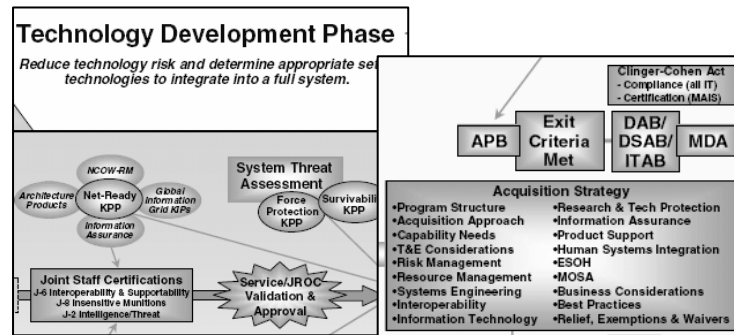


Figure 3. Defense Acquisition Strategy Framework (Acquisition Strategy)
Source: Defense Acquisition University, *Integrated Defense Acquisition, Technology Management Framework* (Fort Belvoir, Virginia: Defense Acquisition University, 29 August 2005), 1 [document on-line]; available from https://acc.dau.mil/simplify/ev.php?ID=79158_201&ID2=DO_TOPIC; Internet: accessed 11 February 2006.

Summary and Conclusion

The methodology chosen for this project was relatively simple. Begin with National Security and Defense Strategies as the direction and purpose, transition to *US Code* and DoD directives as the governing and regulatory forces; couple the entire cycle with Army Regulation by laying out the specific steps of the materiel fielding then overlay professional commentary about what is actually being executed in the field. Lastly, compare the historical accelerated fielding projects of MLRS and Stryker against that standard. To that end, literature review sets the stage for the analysis and conclusion process in chapter 4. The analysis chapter process builds upon itself and presents the general findings from research conducted in the previous chapter. The conclusion

initiates the final efforts in revealing the answer that determines whether the Army is flexible enough to safely field combat systems to support contingency operations.

¹George Washington, "First Annual Message to Congress" (New York City, 8 January 1790), 1 [document on-line]; available from <http://gwpapers.virginia.edu/documents/union/state1.html>; Internet; accessed 11 February 2006.

²Chief of Staff, United States Army, *2005 Army Posture Statement, Mission: Supporting the National Security and Defense Strategies* (Alexandria, Virginia: United States Army. April 2005), 3

CHAPTER 4

FINDINGS AND ANALYSIS

The Army Transformation Roadmap is the Army Transformation Strategy to manage the actions and activities across the DOTMLPF domains to build new capabilities for the current force. It also develops the essential capabilities to make the Future Force relevant, responsive, and dominant to emerging threats. The Nation's first Commander-in-Chief, George Washington, crafted the original charter for the Army in 1775 when he stated, "Let us have a respectable Army, and one such as will be competent to every contingency." The goal of Army Transformation is the development of the Future Force—a strategically responsive, precision maneuver force, dominant across the range of military operations. Development of the Future Force allows the Army to accelerate proven DOTMLPF capabilities to enhance the effectiveness of the Current Force. Implementation of the Army Transformation Strategy provides the relevant, ready, and dominant land power capability to combatant commanders and the joint team now and in the future.¹

Donald Rumsfeld

Introduction

Chapter 4 presents the information collected regarding acquisition and the development of rapid fielding. The information contained herein is organized to provide analysis and findings subsequent to questions regarding the case study involving 2-4 FA. Content and description for this chapter takes its shape from federal, DoD, and Army regulations and instruction pertaining to acquisition as described previously and places the case study subject, M270A1, in the acquisition framework.

The intent is to breakdown the secondary questions concerning the case study on 2-4 FA; this methodology provides a detailed chronology of how the case study unfolds against questions concerning the materiel fielding process. To summarize the central

question; does current Army materiel fielding doctrine properly support rapid fielding of essential major combat systems during contingency or wartime operations. This chapter takes reference from various documents collected on acquisition, historical accounts on the Iraq war and the historical reference from COL Sprayberry. Secondly, the purpose of materiel fielding source data provides a template, basic references in regulation and provides the foundation for placing this case study in context. The entire process creates a platform for this case study to answer the secondary and primary questions.

The scope of this chapter seeks first to answer the secondary questions.

Subquestion #1: Materiel Fielding Process

What are the basic steps of the materiel fielding process and determine if there is a separate process for critical/essential combat systems, such as the MLRS and Stryker.

Army acquisition framework is separated into five basic steps: identifying operational need, concept and technology development, system development and demonstration, production and deployment, operations support and sustainment. The process begins with the underpinnings of the *National Security Strategy* that develops force requirements, builds future doctrinal objectives, and provides direction to the Department of Defense. Accordingly, the Department of Defense articulates the *National Security Strategy* as the foundation to military doctrine and defense strategy for the future. The current strategy, focusing on the global War on Terrorism, has set the course for change in military strategy that in turn currently drives future force requirements necessary to fulfill that strategy. Acquisition priorities become nested in the DoD strategy that provides direction in developing defense systems.

The tenets as articulated in military strategy, new and emerging threats, or changes in military structure (transformation) focus DoD military commands and drive system requirements and operational needs. The beginning of the acquisition framework start with the activities associated the NMS and defining an operational need to fulfill that particular strategy or requirement (combat system).

Operational needs then steer technology and drive the research process into identifying a technology; once the requirement is refined and approved the system transitions into concept refinement.

Concept refinement is the initial formal milestone stage and consists of defining user needs and refining the materiel requirements. The purpose is to evaluate all viable alternative solutions such as developing a new system, commercially available products, modifying a previously developed system, or joint component development program. Concept refinement permits further development of the requirement, cost schedule, production goals, resource allocation and development of an acquisition plan. The acquisition plan includes testing timelines, funding requirements, and second tier final consideration to determine if a commercial alternative or viable industry, expertise or joint development project exists that might fill the new system requirement.

Technology development is dedicated as part of the concept refinement stage that devotes energy toward modification and improvement of the system to meet military specifications as outlined in the requirements document. This stage permits the determining of requirements as a total integrated system as associated command and control radio communications and computer or digital interface equipment are applied to the base structure. Parallel to the system modification and improvement is the analysis

applied to logistics structure, lifecycle and financial development. During this stage, logistics support plans are reviewed for integration with existing maintenance programs and to determine logistics support interoperability requirements and repair parts budget requirements. Endstate for the technology development period is expansion from an operational need into a complete acquisition strategy that has fully considered capability requirements, environmental impact, systems engineering, human interface and interoperability, budget constraints and product life cycle support.

System development and demonstration confirms the system as a development program. The purpose of this stage is to advance the system in accordance with user requirements and stipulations laid out in concept refinement and technology development. This stage of development seeks to establish interoperability, safety, mission need and budget supportability. Prototype system designs outline capabilities and serve to complete demonstration, test and modeling purposes. Logistics support plans detailing supportability are reviewed for redundancy against other military systems, and cost avoidance measures are applied to the support plan. The overall objectives in this stage of development is to completely validate potential and test system operability within the intended environment; conduct extensive lethality, survivability and operational testing, demonstrate logistics supportability, perform technical review and validate budget objectives as applied to environmental performance.

Production and deployment is the developmental stage that commits to production or procurement of the system. The goal of production is to achieve system functionality as stipulated by the user. To achieve this purpose, there are essentially two methods of production.

-Low Rate Initial Production (LRIP): Sanctions limited production of the system in order to test and examine the capabilities of the desired technology to determine if the system performs as expected.

-Full-Rate Production (FRP): (Once the system has passed reliability, maintainability supportability and sustainability requirements FRP is achieved once the system had satisfactorily passed all tests and achieved mission capabilities.) FRP is still monitored and incremented over time, as most military systems require large preplanned funding spread one or more fiscal periods. Resource constraints drive incremental production however, preplanned into incremental production are decision points designed to review production, validate system purpose within the DoD strategic framework, review operational performance and apply technical and safety modifications to the platform.

The materiel fielding process is nested in the production and deployment stage of the acquisition processes as outlined in the steps listed in the framework process. The materiel fielding process is a subset of the production and deployment stage and represents the post-production efforts of operations and support. The PM emphasis shifts from design, development and manufacturing to support and preparation for fielding the system to using units. Upon successful full rate production, the PM begins the groundwork and preparation for the Materiel Readiness Review Board and the processes associated with Total Package Fielding. Figure 4 depicts the likely beginning, but not necessarily placement, of materiel fielding within the production and deployment stage of the acquisition framework.

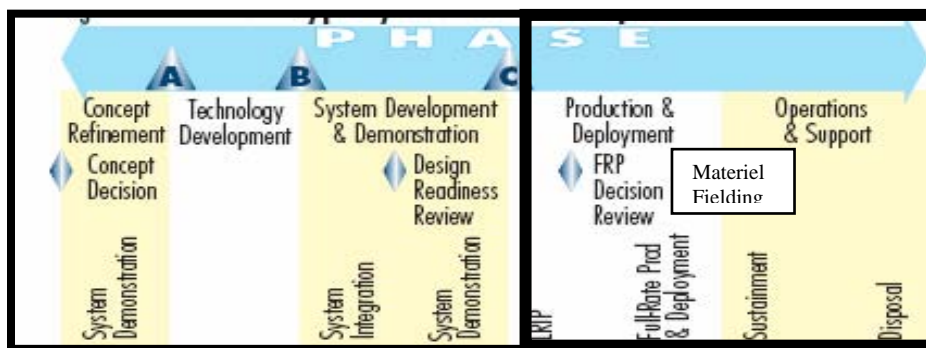


Figure 4. Stage C (Production and Deployment)

Source: Defense Acquisition University, *Integrated Defense Acquisition, Technology Management Framework* (Fort Belvoir, Virginia: Defense Acquisition University, 29 August 2005), 1 [document on-line]; available from https://acc.dau.mil/simplify/ev.php?ID=79158_201&ID2=DO_TOPIC; Internet: accessed 11 February 2006.

From research pertaining to the secondary question, there is no appreciable special set of materiel fielding conditions particular to combat systems. The MLRS, Stryker and more recently the Future Combat System (FCS) all undergo the same acquisition process as described above. However, when necessary, there are provisions that permit the milestone decision authority to authorize entry into the acquisition framework at any point as long as the system conforms to entry criteria listed for that stage. A representative example is the M270A1 system; it entered the acquisition framework at Milestone B because the base system had already gone through the concept and technical refinement associated with the base model M270.

Subquestion #2: Critical Steps in the Fielding Process

Does the Army prescribe critical steps in the rapid fielding process and benchmark them against improper fielding? Determine if the process asks the tactical commander to accept risks.

The acquisition framework establishes entry criteria for each milestone stage as well as capability documents that validate the proposed system met the requirements necessary prior to milestone stage exit. Figure 5 correlates the requirements document to the corresponding next stage.

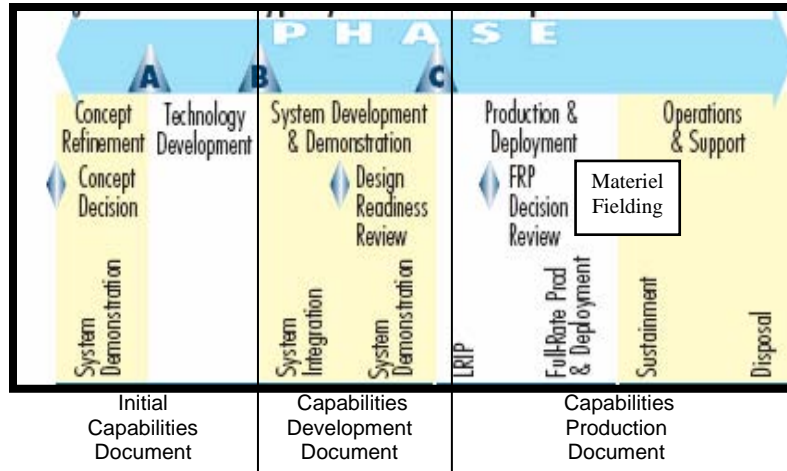


Figure 5. Acquisition Framework Capabilities Documents

Source: Defense Acquisition University, *Integrated Defense Acquisition, Technology Management Framework* (Fort Belvoir, Virginia: Defense Acquisition University, 29 August 2005), 1 [document on-line]; available from https://acc.dau.mil/simplify/ev.php?ID=79158_201&ID2=DO_TOPIC; Internet: accessed 11 February 2006.

Therefore, throughout the acquisition framework safeguards are integrated all the way through the process; each milestone, more accurately the milestone decision authority for the project, must consent signifying approval that the system conforms to the given set of conditions and is ready to proceed to the next developmental stage.

The question pertaining to tactical risk conceivably rests in the actual materiel fielding and the decisions made at the unit level. Discussion and response to this important question is postponed for discussion until later in this chapter. The question of

tactical risk essentially becomes the heart of the question, lies directly with the timeliness of decisions at the strategic level, and overall provides discussion material that drives to the core of this case study.

Subquestion #3: M270A1 Materiel Fielding

Was the fielding case for 2-4 FA indicative of standard fielding procedures of AR 700-142? Why was 2-4 FA fielded out of DAMPL?

From the research conducted, systems fielded such as the Stryker and the MLRS were not exceptions to the standard fielding process as described in AR 700-142 or DoDD 5000 series. Research revealed that the MLRS was in Milestone C, Production and Deployment, portion of the acquisition process and approved LRIP, initial operating test and evaluation, designated later to a mixture of full materiel release. However, in FY 2001, the M270A1 experienced significant safety shortcomings and FRP shifted until late 2001 to correct safety deficiencies.

In July 1999 the originally scheduled FY99 IOT&E was postponed from 23 August – 17 September 1999 to 30 April – 28 June 2001. This decision was based upon several factors as outlined in the Updated MS II TEMP, dated 2 March 2000. The program was considered at high risk to achieve positive evaluations from the U.S. Army Operational Test and Evaluation. . . . The objective configuration would have entered the Initial Operating Test (IOT) with acknowledged and significant shortcomings. The Product Manager, M270A1 subsequently requested a Customer Test be conducted in lieu of the postponed IOT to collect data to support the resolution of technical and performance issues prior to the IOT. The restructuring of the M270A1 program resulted in the addition of the M270A1 ESIT-2 prior to the rescheduled IOT. In October 2000, the M270A1 MLRS IOT was postponed again from 30 April – 28 June 2001 to 13 August – 12 October 2001 because of safety shortcomings. The ESIT-2 was postponed from 4-15 December 2000 to 9-20 April 2001. The revised restructure plan fully qualified, evaluated, and demonstrated the adequacy of modifications to the system in preparation for the IOT&E and ultimately the production decision.²

To decipher where in the framework the M270A1 fits in it is proper at this point to reiterate the definition of materiel release. Per AR 700-142, "full materiel release signifies that the Army has rigorously tested and evaluated the item and determined that it is completely safe, operationally suitable and logistically supportable for use by Soldiers."³ The M270A1 attained Material Release 2d Quarter, FY 2002 as depicted (Figure 6, below) in the M270A1 Integrated Test Program Schedule. The M270A1, programmed for Low Rate Initial Production, fielded nineteen Launchers to 2-4 FA beginning September 2002 ahead of FRP schedule.

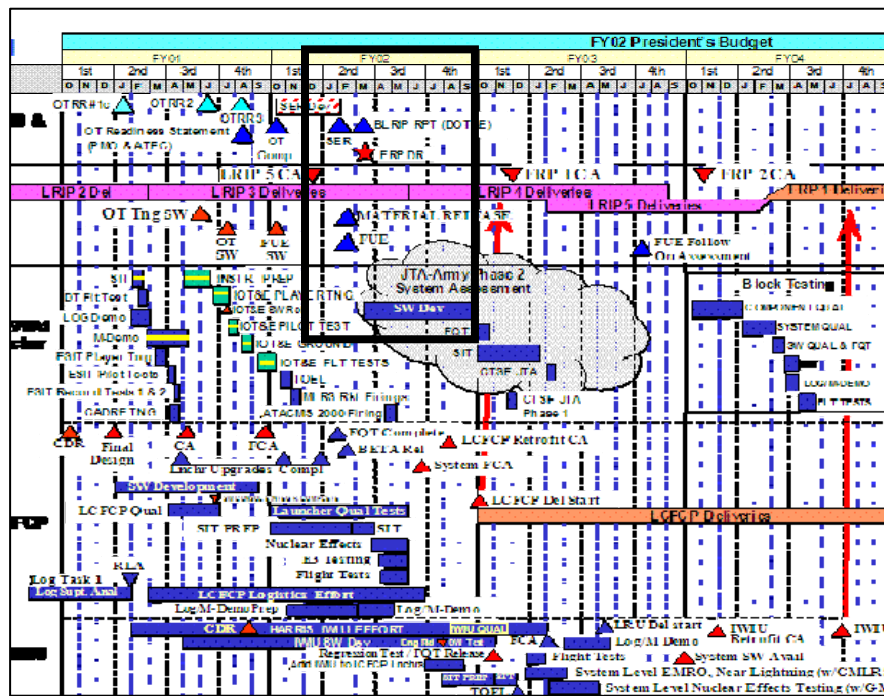


Figure 6. Extract MLRS Integrated Test Program Schedule⁴
Source: US Army, *MLRS Integrated Test and Background Schedule*, Washington, DC, 11 December 2001, 2 [document on-line] Available from, Internet; www.hqda.army.mil/tema/TEMP%20101/PART2/PART%202A%20MLRS.doc.

The test schedule also lists First Unit Equipped (FUE) as approximately the same timeframe as materiel release. Research indicates 2d Battalion 20th Field Artillery Fort Hood, Texas received the first compliment of M270A1 launchers; according to COL Sprayberry, CDR 2-4 FA, his unit was notified to be prepared to receive M270A1 launchers beginning October 2002, again, ahead of FRP.

The M270A1 began operational testing in July 2001. The tests consisted of both ground and flight phases where soldiers from 1-12 FA, 17th Field Artillery Brigade, III Corps Artillery at Fort Sill demonstrated the capabilities of the M270A1 alongside the basic M270 launcher. The ground phase at Fort Sill consisted of three, 96-hours field exercises firing 108 reduced-range practice rockets (RRPRs). The flight phase at White Sands Missile Range, New Mexico, consisted of firing many pods of M26 and M26A2 rockets as well as one M39A1 ATACMS missile out to a range of 171 kilometers. The Operational Test Command evaluated the tests, which included the full range of mission profiles of the MLRS launcher and its MFOM.

The M270A1 performed magnificently--in many cases, exceeding expectations. It demonstrated it can load, hide, move, aim, shoot, and reload in an unprecedented manner. When compared to the M270, the M270A1 reduced nearly every time standard, to include total mission cycle time, launcher lay to completion of fire, reload and last round fired to first movement. The shorter times improved effects on target and increased soldier survivability. The M270A1 demonstrated it can receive, process, service the target and move long before the crew is susceptible to counterfire.⁵

To summarize, the question asked if 2-4 FA fielding was indicative of the standard fielding process. Essentially, the answer is yes and no. From research, the fielding had a compressed timeline as the fielding team, given little advanced notice of the 2-4 FA fielding, trimmed and compressed the total fielding timeline to meet directives. Therefore, the 2-4 FA fielding was nonstandard and deviated from DA PAM 700-142 and regulation.

More time must be devoted to researching exactly what procedures and training were scaled back by the fielding team. To get a clear-cut answer, the 2-4 FA fielding

should be considered against another M270A1 materiel fielding conducted subsequent to 2-4 FA. Notwithstanding, the question of whether the fielding was conducted to standard given the timeline constraints is subject to interpretation and, in reality, subject to review of the recipient of the compressed timeline (gaining command). DA PAM 700-142, chapter 3, states “the objectives of the fielding process are to ensure that the fielding, gaining, and supporting commands will have sufficient time and advance information to plan, program, and budget for the necessary materiel, personnel, skills, and facilities to properly receive, use, maintain, and support the new Army systems.” Arguably, both the fielding team and the gaining command stated they didn't have sufficient time to normally complete the 2-4 FA fielding; according to Colonel Sprayberry, “since this was an out-of-DAMPL fielding and was being done a full year in advance we had to concentrate it down to six weeks for everything.” The original fielding plan, according to Colonel Sprayberry thought to be twelve weeks in length, condensed down to six.

Colonel Sprayberry articulated that he created more training time by using weekends as supplementary training days to become more familiar with the new system and work through technical deficiencies. In the end, the fielding for 2-4 FA was completed to Colonel Sprayberry's satisfaction as the unit executed a successful 10-day training field exercise as a final tactical validation.

Key to this question regarding whether the fielding was conducted to standard is to answer the questions associated with the general question. This ambiguity leaves considerable discussion room regarding as to exactly what training was sacrificed at the expense of the compressed timeline. Review of all available fielding team AARs pertaining to 2-4 FA suggest the fielding was completed to standard from a materiel-

fielding standpoint leaving little understanding as to what might not have been trained by the fielding team.

Plausibly, the accelerated timeline prompted decision makers (214th FA BDE Commander, Colonel Boozer and the 19th Maintenance Battalion Commander, Lieutenant Colonel Baragona) to forego DS level training in order to provide more preparation time to 2-4 FA.

Subquestion #4: Why 2-4 FA was fielded out-of DAMPL

To answer this question requires review of key events leading to the invasion of Iraq. According to historical review of the events leading to the invasion, after the 2000 election the Bush Administration began planning for some type of anticipatory military action against Iraq and actively presenting plausible courses of action as early as the inauguration. Secretary of Defense Donald Rumsfeld, chairing the second administrations “first security council meeting discussed plans on invasion of the country (Iraq)”⁶ instructed his planners to beginning exploring war plan options in the event Saddam Hussein began casing trouble in the Middle East and required US intervention and/or military action in some fashion.

As a result, in late 2000 the Pentagon directed Central Command to begin building and wargaming probable courses of action for the invasion of Iraq. According to research found by the authors of *Cobra II - The Inside Story of the Invasion of Iraq*, one of the early war plans included the use of deep strike artillery and the ATACMS missile.

The V Corps would be under the operational control of CENTCOM on Iraq, and it should be ready to attack as early as January or February 2002. There was no talk of going to Baghdad; the mission was described as establishing an enclave in southern Iraq. . . . To control the southern Iraqi oilfields, he envisioned a substantial security zone, one that extended north of the Euphrates. A security

zone of that size would keep any U.S. forces that arrived in Kuwait out of the range of Iraq's short-range missiles. The lodgment would also give the United States a base for further attacks deeper into Iraq: the V Corps would operate within 75 miles of Baghdad. The Army could fly UAVs (unmanned aerial vehicles) in and over Baghdad, dispatch attack helicopters, or strike targets to their north with ATACMS surface-to-surface missiles.⁷

Meanwhile, as political decisions concerning Iraq were evolving at the Pentagon and White House, at the unit level, despite never officially being advised about deployment to Iraq, COL Sprayberry began fielding the M270A1. Early January 2003, almost a month after fielding the M270A1, his unit began preparations to deploy.

The final request for forces the Pentagon called for in the eventual Iraqi campaign plan, entitled Cobra II⁸, presented the grand nature and definitive strategic objectives. The Bush Administration intended to display all instruments of national power wielding a heavy military dimension. Operation Iraqi Freedom combined joint military forces that brought heavy agile and lethal military might, of which the deep strike surface-to-surface ATACMS weaponry was intended to strategically annihilate and shatter Iraqi will to fight before coalition forces heavily engaged with Saddam Hussein's Republican Guard Division.

The US would need two divisions, the requisite artillery, Patriot anti missile batteries, logistics, and fuel. . . . The allied air and ground attacks were designed to shatter Iraq's command and control and destroy the regime's most loyal troops, inspiring "shock and awe."⁹

Accordingly, the M270A1 brought the deep fires performance to the campaign, using ATACMS and Unitary missiles, and fashioned a plausible answer to the question regarding fielding the M270A1. Overall, Pentagon planners recognized the lethality that surface-to-surface missiles brought to the battlefield. Further review of campaign plans

and research on the invasion of Iraq and interview of key officials provides plausible answers as to why 2-4 FA was fielded out-of DAMPL.

2-4 Field Artillery After-Action Review

The following represents an electronic-mail account of the fielding done for 2-4 FA per former commander Colonel Billy A. Sprayberry. The context of the conversation represents a series of questions posed to him regarding the MLRS New Equipment Training (NET) and accelerated fielding completed beginning October 2002.

Q: What did we do to field the M270A1?

A: The M270A1 was originally set for fielding to the 214th BDE beginning in Oct 2003. This was almost a full year in advance. At the battalion level, I believe – not 100% certain, 1-14 FA was set to be first. That notwithstanding the decision was to field 2-4FA. The planned fielding schedule was to take 12 weeks to go through all the steps to field the new equipment. However, since this was an Out-of-DAMPL fielding and was being done a full year in advance we had to concentrate it down to six weeks for everything. It should be noted that I was never told on an official basis that we were being fielded the new system so that we could go to the gulf. COL Boozer may have been told but I did make that assumption. I was also, as the battalion commander, given some flexibility in the fielding schedule. I used that flexibility to work on several weekends in order to create time for the 10-day Training Exercise we did at the end of the fielding. I did this because of the assumption of deployment and it allowed us to work out the “bugs” associated with the new equipment and to get some much-needed training in other routine tasks: i.e. movement, communication and NBC... We did find some bugs in the new equipment and I did have to get some support from MG Maples in getting experts in to help us work through them. I feel it paid huge benefits. We received our “Be Prepared” order for deployment less than two weeks after the final exercise and our actual order to load the trains exactly 4-weeks after the final exercise. This clearly validated the assumptions. The decision to field the M270A1 early was made at a very high level (I am not certain where or who) and was tied directly to the war games that were being conducted in Europe at the time on possible scenarios for an attack into Iraq.

Q: How was the M270A1 packaged for deployment?

A: As with any new piece of equipment, the M270A1 came with some PLL and a recommended stockage. There was no data to back up these parts or their associated levels of stockage. Some of the parts were used in our Training

Exercise and were difficult to come by but with a bit of help from BG Formica we were full up by deployment. There was also additional training for several groups, beyond the crews, within the battalion that were specifically related to the new launcher:

- Mechanics – additional training on the engines, Loader Launcher Mechanisms (LLMs).
- Communications – additional training on the new communication system, CVC helmets, Fire Control Computers.
- Ammo – there was additional training for ammunition crews for the handling of the wide variety of munitions that the 270A1 was capable of firing.
- There was also training for some members of the DS Maint in the 19th BN.
- Fire Direction Centers – there was training for soldiers in the FDC on several aspects of the communications and field on certain screens of the system associated with the new ammunition capabilities.

The new system also came with NO printed manuals (i.e. dash 10, etc). They were all on computers and training had to be conducted on how to use the computers and how power for the computer system was derived from the launcher itself. There is virtually no way to tell the difference between the M27 and M270A1 just by looking. That can also be said for the physical characteristics of deployment of the Launcher by rail, sea, and air. Consequently, there was little to do in preparation for this.¹⁰

The second element of the interview with Colonel Sprayberry centered on the supportability of the M270A1. The intent of the question was to decipher whether or not the decision to field the M270A1 during his preparation for deployment created support issues:

Q: (a) Why did we take contracted support from Lockheed Martin, (b) did it work (why / why not), (c) why did we not take 19th Maintenance.

A: (a) Lockheed Martin (LM) was the primary contractor for building the M270A1. Consequently, they had the most knowledge of the system. Also, part of the contract actually included contract support – this was only one person. In fact, we had already identified office space in our Motor Pool for the contractor even if we had not been deployed. A close read of the Army Contract with LM included support in hostile areas. LM also provided a vehicle with a shelter on the back for their contractor (this shelter contained very modern tools and diagnostic equipment for work specifically on the Fire Control Panel of the Launcher). We

did take this shelter to the Gulf and it worked great until it got shot up a bit and some of the equipment was damaged. LM had sublet part of the contract for the M270A1 to the Century Company. Century makes engines, among other things. The new launcher had the newest engine, the Century 600 (same as in the latest version of the Bradley Fighting Vehicle). This new engine had been modified specifically for the M270A1 with a hydraulic clutch to run the Launcher Load Mechanism (LLM) on the launcher – this is what gave the LLM all of the new speed. A consultation with COL Boozer and he and I were in agreement and we requested that an engine specialist also deploy with us. It was approved – so in the end we had two civilians as contract support with us.

(b) I thought it worked great! They were very focused on their jobs. They did not have the duties of the soldiers and mechanics like guard duty, patrols, running convoys. They could focus on the maintenance of the Launcher and the launcher is the only reason the battalion was there. You are probably just as, if not more, familiar as I am with the problems we had securing repair parts for all equipment not just the launchers. Our two contractors possessed skills and experience that the soldiers did not have and were able to actually fix broken or bad parts to keep the launchers in the fight. You will remember that I never reported more than two launchers down at any one time until the night one blew up on the Airport.

(c) We did use 19th Maintenance. In fact, I had with me a full complement of a Maintenance Support Team (25 soldiers (sic) in the correct grade and MOS) attached to 2-4 FA from 19th Maintenance. Those whose specialty had to do with the launcher had undergone all the training at home station associated with the New Equipment Fielding. This also contributed to the success we experienced.¹¹

The interview with COL Sprayberry did not indicate concern with the M270A1 fielding nor performance of the launchers in combat. His assessment indicated satisfactory performance with minor concern over parts availability in the combat zone. COL Sprayberry's review of maintenance supportability indicated a positive review of contract support alongside military maintenance was a combat multiplier that kept the launcher working despite the austere environment. With regard to the fielding, COL Sprayberry expressed approval and satisfaction with the level of operator training and maintenance support training provided to his unit. Despite the tight fielding timeline, COL Sprayberry was able to properly train and certify his new launcher crews to his

satisfaction using weekends, before his focus had to turn to preparing equipment for deployment.

M270A1 Fielding Team After Action Review

The Fielding Team's chronological review of actions conducted on behalf of 2-4 FA suggests that Precision Fires Rocket and Missile System (PFRMS) Program Management Office (PMO) was directed, with little notice, to begin preparations to field and upgrade an MLRS artillery unit in preparation for deployment.

M270A1 NET training was an overall success. All methods of fire control were shot over the entire range of MLRS Family of Munitions (MFOM) and Army Tactical Missile Systems Family of Munitions (AFOM). . . . Fire mission processing and reloads were within standards. . . . Also, recommend that 2-4 FA focus on Battery and Battalion Collective training task. War plans need to be reviewed to account for the new capabilities the M270A1 brings to the fight.¹²

The final report summarizes the accelerated fielding as a three-phased approach to the NET and fielding of the M270A1 and indicates there was "little or no" notice given to the fielding team nor the gaining command (Fort Sill) that the upgrade was going to occur. Conclusive summary describes that despite little notice, the 2-4 FA fielding was successful from the fielding command having met unit expectations.

Interpretation and Analysis of Findings

The mission to answer the central question of whether the Army materiel fielding doctrine properly supports contingency fielding operations was soon apparent after aligning the acquisition framework with the historical timeline of the M270A1.

Essentially, the fielding process employed in this case was properly supported despite constraints. The redeeming feature in this example was superb vision and leadership. Colonel Sprayberry understood the strategic and operational foresight, his

farsightedness despite insider information, concluded his mission was to find a way to “make things happen” and improvise a solution. The term “properly supported” in this context means that the directive to field the system was accomplished given the context and timeframe provided.

Further, analysis and research provides sufficient background information that the M270A1 tested and performed satisfactorily enough during IOT&E to convince decision makers that the system was capable of performing despite being in LRIP. The final plan, Cobra II, required the surface-to-surface technology and despite partial testing and low-rate production, Cobra II called for the technology, thus equipped, and deployed a battalion of nineteen launchers as a Corps deep strike capability within the strategic framework.

Tactical risk becomes an issue for discussion at this point because of the nature of the overall strategy involved. The ripple effect of the ever-changing war plan surfaced at the tactical level of planning. In this case, the M270A1 fielding for 2-4 FA and thus the reason for the question, does rapid fielding ask the tactical commander to take risk? The most likely conclusion at this point is probable in the case of 2-4 FA; however, but make possible the use of contractors to mitigate the maintenance shortfalls, and extra training time built in by Colonel Sprayberry more than likely reduced the overall risk to 2-4 FA.

The key points associated with tactical risk include the hazards associated with fielding a combat system with proven test safety shortcomings. This question strikes at the heart of this case study and gives reason for discussion central to the decision to field combat systems and gives rise to further discussion regarding future systems such as the new NonLine of Sight Cannon (NLOS). Given the success of the M270A1 and other such

combat systems, the emphasis now becomes how to leverage technology; push program development and testing from years to perhaps months. Changing and evolving modern warfare dictates technology adapt, as the new generation of future weapons demand maximum firepower today rather than years from now. The challenge involved now becomes how to leverage technology and risk as future weapons, such as the NLOS, in production and testing promise lethal, devastating effects and pinpoint accuracy.

Despite projected strategic and tactical risks, the 2-4 FA combat experience dispelled fears and confirmed performance expectations as the unit executed combat missions and traveled over 1500 miles without reporting significant performance, safety or maintenance shortfalls. Personal experience confirms the repair parts supportability shortfall as Corps resupply and direct support maintenance proved troublesome during the entire Iraqi campaign. Only when 19th Maintenance Battalion arrived in Kuwait, did the repair parts for the M270A1 improve.

Regarding the question of rapid fielding, given our asymmetrical contemporary operating environment, increasing political emphasis is placed upon leaders to reduce the growing number injuries and fatalities due to ineffective combat gear. To facilitate self-protection measures, rapid fielding in this context takes commercially available Common Table of Allowance (CTA) items like the Advanced Combat Helmet and Individual Body Armor System (IBAS) and works rapidly through the acquisition framework to field these critical items. More often, the commercial items have undergone a rigorous testing process; therefore, the products enter the acquisition milestone stages commensurate with the peculiar commercial item. The appropriate checks and balances ensure fair and legal acquisition process and expedite quick fixes to meet operational requirements. However,

more work is required and field research necessary to determine if accelerated fielding places strain on military units in areas of accountability, training and logistics supportability. While the specific case of 2-4 FA did not indicate problems as the M270A1 is an ACAT-I project and does not quantify equal footing with CTA equipment; however, few field reports from Iraq and Afghanistan indicate growing concern as units' struggle to account for and support the large numbers of RFI equipment items flowing to soldiers and units.

While initiatives like the Rapid Fielding Initiative have been effective in filling gaps, few if any such 'systems' come with Prescribed Load List (PLL) or any sustainment plan making them a burden to the system. Like it or not, there is a system that supports procurement and fielding and it must be adhered to in order to provide long term support to the forces in the field. This will be the first real step in accommodating the approaching reality of budget reduction.¹³

The most significant take-away from this project is the time and energy devoted to researching acquisition from Federal, *US Code* and Department of Defense perspective. More importantly, the new and future generations of weaponry demand an evolution of acquisition that necessitates the entire process adapts to the changing modern warfare needs; the standard processes described are laborious and time consuming for a majority of Army systems. The conclusions and recommendations of Chapter 5 offer commentary and insight into efforts and hard work occurring to trim elaborate and multifaceted acquisition process.

¹Chief of Staff, United States Army, *2003 Army Transformation Roadmap*. (Alexandria, Virginia: United States Army, 2003), 2.

² US Army, *MLRS Integrated Test and Background Schedule*, (Washington, DC, 11 December 2001), 1 [document on-line] available from, Internet; www.hqda.army.mil/tema/TEMP%20101/PART2/PART%202A%20MLRS.doc; 1.

³US Army, AR 700-142, *Instructions for Materiel Release and Transfer* (Washington, DC: Department of the Army, 1 July 2004, 32).

⁴US Army, *MLRS Integrated Test and Background Schedule*, (Washington, DC, 11 December 2001), 1 [document on-line] available from, Internet; www.hqda.army.mil/tema/TEMP%20101/PART2/PART%202A%20MLRS.doc; 1

⁵Rocky K. Samek. "M270A1 an MLRS launcher with leap-ahead lethality," *FA Journal* (March 2002), 1 [document on-line] available from; http://www.findarticles.com/p/articles/mi_m0IAU/is_2_7/ai_86053730; Internet; accessed 1 March 2006.

⁶Wikipedia, "2003 Invasion of Iraq," (Wikipedia, 21 March 2006), 1 [article on-line]; available from http://www.wikipedia.org/wiki/2003_invasion_of_iraq; Internet; accessed 21 March 2006.

⁷Michael R. Gordon and Bernard E. Trainor, General Ret. Marine Corps, *Cobra II: The Inside Story of the Invasion of Iraq* (New York: Pantheon Books, Random House, 2006), 20

⁸*Ibid.* 77

⁹*Ibid.* 82

¹⁰Wikipedia, "2003 Invasion of Iraq," (Wikipedia, 21 March 2006), 1 [article on-line]; available from http://www.wikipedia.org/wiki/2003_invasion_of_iraq; Internet; accessed 21 March 2006.

¹¹*Ibid.*

¹²Lieutenant Colonel John A. Chicoli, "2-4 FA Historical Documents," 26 January 2006, Personal AKO Email, (28 January 2006).

¹³LTG Steven Boutelle, "Joint C4 and Space Operations for the Current and Future Force" (US Army War College symposium, US Army War College Strategic Studies Institute, Carlisle, Pennsylvania, 1 July 2005), 1 [article on-line]; available from <http://www.strategicstudiesinstitute.army.mil/newsletter/newsBig.cfm?newsID=56>; Internet; accessed 10 January 2006.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

We are at a critical time in history of this great country and find ourselves challenged in ways we did not expect. We face a ruthless enemy intent on destroying our way of life and an uncertain future security environment. The War on Terrorism is a war of long duration that differs from the kind of conflict for which the Department traditionally prepared. Our focus is increasingly on the search for small cells of terrorists and on building the capacity of our partners. However, we must also retain the capability to conduct sustained conventional combat operations and to protect the homeland. We must prevail now while we prepare for the future. This demands a wide range of military capabilities, superb trained forces, and increased joint, and coalition integration.¹

Donald Rumsfeld

Introduction

This case study focused on identifying the basic principles of materiel fielding and placing the 2-4 FA fielding inside the acquisition framework. The importance of the thesis project and research focused primarily on actions within the acquisition framework that concentrated largely upon understanding the acquisition process and the underpinning groundwork from Federal, DoD and US Army levels. Hence, this project was not so much about uncovering new principles and virgin territory; but discovery regarding a special undertaking, 2-4 FA fielding, en route to understanding and placing the M270A1 fielding within the strategic framework of Iraq. The last stages resulted in discovering emerging transformation initiatives, specifically RFI and REF, which wed the acquisition community to transformation and early focus upon sustainment capabilities and potential new core principles.

Straightforward, the development of the primary question dealt with placing the M270A1 and the 2-4 FA rapid fielding in perspective; the goal was to answer the primary question center to this case study. Determine if the acquisition system is flexible enough to field critical combat systems in advance of major combat operations such as Operation Iraqi Freedom. The answer essentially was yes.

Over the course of the planning stages of OIF, decision makers recognized the necessity for deep strike capability and precision weaponry capable of decimating Iraq's military forces and weapons of mass destruction. The Bush Administration's preparation and planning directives as related by aides to the Secretary of Defense point out that Secretary Donald Rumsfeld wanted the "best info fast. . . . Judge whether good enough hit [Saddam Hussein] at same time. Not only [Osama bin Laden]. . . . Go massive, and Sweep it all up. Things related and not."² In execution of this task, the final Iraq war plan involved the use of ATACMs and Unitary missiles, which meant the M270A1 became an element of the structure that comprised combat expertise, precision firepower, logistics, and communications.

For 2-4 FA, COL Sprayberry argued for contractor support maintaining that the M270A1 had substantial upgrades to the engine and launcher and was not confident his unit could handle the complexity of the new upgrades. Consequently, his unit required civilian augmentation to sustain engine and fire control upgrades.

A close read of the Army Contract with LM included support in hostile areas. LM also provided a vehicle with a shelter on the back for their contractor (this shelter contained very modern tools and diagnostic equipment for work specifically on the Fire Control Panel of the Launcher). We did take this shelter to the Gulf and it worked great until it got shot up a bit and some of the equipment was damaged. LM had sublet part of the contract for the M270A1 to the Century Company. Century makes engines, among other things. The new launcher had the newest

engine, the Century 600. . . . We requested that an engine specialist also deploy with us. It was approved – so in the end we had two civilians as contract support with us.³

The undertaking to deploy the M270A1 paid dividends as a combat multiplier in battle. Personal observation of the platform, as well as an email interview with COL Sprayberry, substantiated the system's strength. 2-4 FA proved that even at the end of an extended austere supply line, the M270A1 survived the tough environment due primarily to contractor expertise. Artillery support was key to the invasion as the M270A1 proved influential to the Corps Deep Strike mission, firing the first ground missiles in the early hours of war as well as supplying artillery close air support when weather denied coalition forces aviation support.

As the first Army MLRS battalion with a full complement of the newly fielded M270A1 rocket launchers, the unit was deployed in methods that surprised even the maneuver commanders there, making history for the unit and the A1s. March 20, the unit was the first ground forces component in theater to fire in support of Operation Iraqi Freedom. For the first time in combat, it fired the Army Tactical Missile System Quick Reaction Unitary missile, capable of striking targets 300 kilometers away with its Global Positioning System guidance. It fired an initial volley of 63 missiles deep into Iraq. Forty days later the crews still without showers or a hot meal -- the unit had fired 240 ATACMS 10 times more missiles than all the MLRS units in Desert Storm fired combined, according to unclassified post-conflict reports. That, added to the 168 M-26 tactical rockets fired during the operation, made 2nd-4th FA the go-to unit for "deep attack" fires during OIF. Its targets were the highest on the hit list for Central Command forces and included the Ba'ath Party and Fedayeen Saddam Headquarters and a dozen other political hotspots the first day of OIF.⁴

Based on data analysis provided regarding acquisition framework, the M270A1 development project as described was in the production and deployment stage of the acquisition model (See Figure 1). For the duration of this case study concerning 2-4 FA, records indicate the launcher was in early stages of IOT&E and approved for materiel release. One battalion from Fort Hood, Texas fielded the MLRS months ahead of 2-4 FA,

even earlier than the decision to approve Full Rate Production. The importance of earlier fielding indicates that performance satisfaction with the M270A1 was simply a matter of qualitative documentation and a possible shortfall in recording corrected deficiencies.

The acquisition framework takes years, and in some instances decades, to develop and field combat systems. Defeating insurgencies and dominating the Global War on Terrorism demands the acquisition timetable shrink from decades, arguably even to years and months. The standard fielding process was designed for the protracted environment and was perfect for an era where the adversary operated in a deliberate fashion. The 2-4 FA case demonstrates to a small degree the ability to touch emerging technology in a constraint-filled environment, despite shortcomings.

Recommendations and Conclusions

Regarding the course of rapid fielding, this idea is not exactly divergent from doctrine, but a by-product of transformation. RFI is doing great work to get much needed combat gear like the improved body armor (IBAS) and combat helmet (ACH) to soldiers. The rapid advance of commercially available products is a unique combination of existing equipment that has filled the significant and immediate challenges and increased soldier supportability. The RFI and REF programs have significantly closed the performance gap, reduced the battlefield sustainment footprint through quick on-the spot unit issue, and overall gone a long way in saving the lives of soldiers in Iraq and Afghanistan. The emergence of RFI and REF represents an integral part of the ongoing effort in military logistics to facilitate integration and synchronization on the battlefield. The issue of accountability is a larger question that requires further investigation and a recommendation for further study.

Overall, this study presents a broad review regarding acquisition and demonstrates how a singular event in time such as Operation Iraqi Freedom has affected strategic, operational and tactical levels. The historical journey served as an interesting study throughout as the research evolved. The significance as it pertains to this project originates in the operational art of strategic planning. Conclusively, planning for Iraq evolved through numerous iterations and evolved over the course of approximately eighteen months. The operational arrangement of employing guided missile lethality (ATACMs and Unitary) in strategic planning and bringing into play military forces to effect regime change describe the planning of lethal fires as critical to attaining operational and strategic goals. This tactical impact of upon 2-4 FA in the overall grand objective unfurled a tidal wave of decisions that, as it turns out, caused a unit commander to make some important decisions regarding the training and sustainment of his unit.

The journey to that conclusion took a very long path; the insights and lessons learned in this case study provide ammunition for further study in the areas of strategic planning, operational sustainment and unit level decision making. As the Army continues to develop future capabilities, and the War on Terrorism identifies future adversaries to peace, perhaps lessons learned from the 2-4 FA fielding experience may prove useful to other unit commanders placed in similar predicaments. Most historical lessons learned and practical examples have had tremendous influence throughout time that today shape the battlefield.

Finally, this case study represents an overall learning experience and growth period as simply a matter of learning basic acquisition doctrine and applying that knowledge against a special circumstance. The flexibility and initiative demonstrated at

the unit level demonstrates vision, keenness and enthusiasm at the lowest level to adjust to events beyond their scope of influence. This case study also reveals how to some degree strategic inability to develop definitive goals brought about significant ripple effects experienced at the operational and tactical levels. In the end, 2-4 FA deployed to theater and fulfilled the urgent need as defined through strategic objectives. The employment and application of the M270A1 system proved highly successful and invaluable in defining battle space and applying precision lethal fires at the critical time and moment.

¹Chief of Staff, United States Army, *2006 Quadrennial Defense Review Report. Reshaping the Defense Enterprise* (Alexandria, Virginia: United States Army, 6 February 2006), A-7.

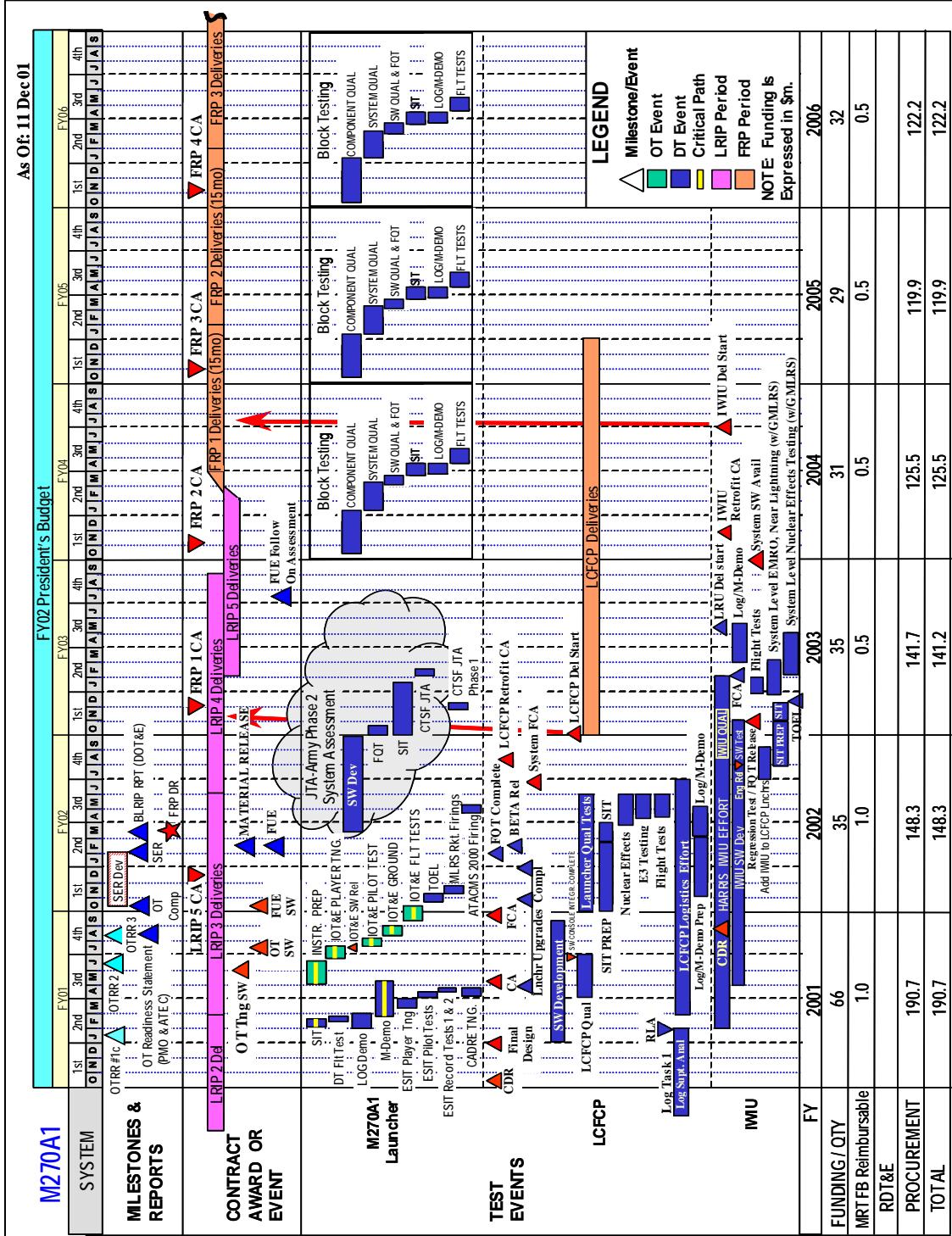
²Wikipedia, *2003 Invasion of Iraq*,” (Wikipedia, 21 March 2006), 1-5; [article on-line]; available from http://www.wikipedia.org/wiki/2003_invasion_of_iraq; Internet; Accessed 21 March 2006.

³Colonel Billy Sprayberry, “Request for Information,” 22 September 2005, Personal AKO Email, (24 January 2006)

⁴Training and Doctrine Command, US Army, “MLRS Unit Provides Operation Iraqi Freedom Fires When Nothing Else Can”(TRADOC, 31 October 2003),1 [article on-line]; <http://forums.military.com/groupee/forums/a/tpc/f/9521924461/m/8451906386/r/4630016710001>; Internet; Access 31 January2006.

APPENDIX A

MLRS TESTING SCHEDULE



APPENDIX B

MLRS TESTING BACKGROUND

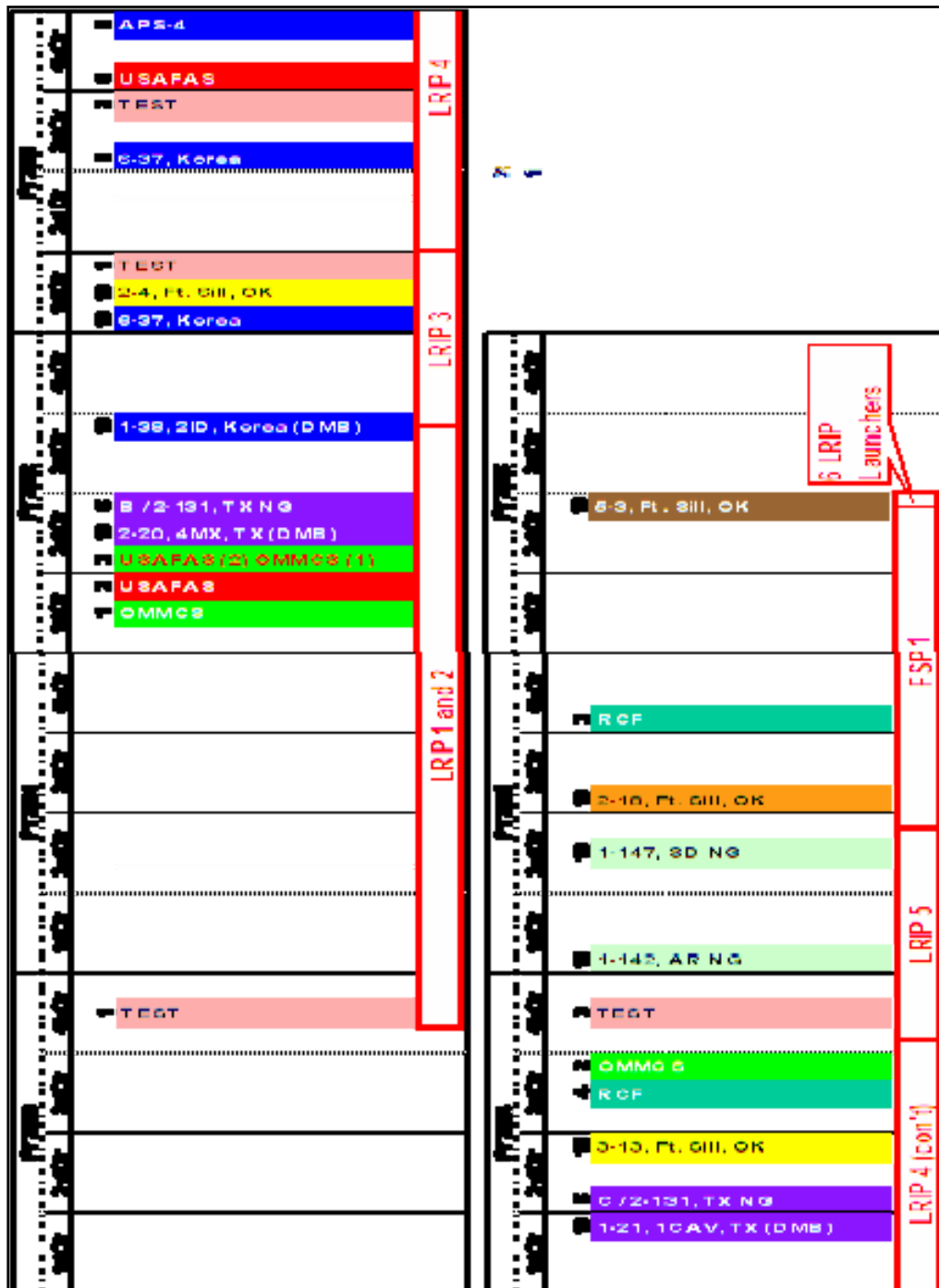
Integrated Test Program Background and Schedule: The IFCS and ILMS modifications were two separate program elements. Both were Acquisition Category III programs with the Program Executive Officer, Tactical Missiles as the MS Decision Authority. As a result of an integrated test flagship program initiative, the IFCS and ILMS test programs were combined beginning at system integration (late FY97). While the IFCS and ILMS underwent separate LRIP decisions, they were scheduled for a combined MS III decision (now known as the FRP DR). IFCS/ILMS low rate production of modification kits began in FY98 after the LRIP decision (now known as MS C). The IFCS modification kit and the ILMS modification kit will be concurrently installed on selected M270 launchers. The M270A1 Acquisition Program Baseline schedule remained on track until 3QFY99.

In July 1999 the originally scheduled FY99 IOT&E was postponed from 23 August – 17 September 1999 to 30 April – 28 June 2001. This decision was based upon several factors as outlined in the Updated MS II TEMP, dated 2 March 2000. The program was considered at high risk to achieve positive evaluations from the U.S. Army Operational Test and Evaluation Command (now the U.S. Army Test and Evaluation Command (ATEC) and Director, Operational Test and Evaluation, OSD. The objective configuration would have entered the IOT with acknowledged and significant shortcomings. The Product Manager, M270A1 subsequently requested a Customer Test be conducted in lieu of the postponed IOT to collect data to support the resolution of technical and performance issues prior to the IOT. The restructuring of the M270A1 program resulted in the addition of the M270A1 ESIT-2 prior to the rescheduled IOT. In October 2000, the M270A1 MLRS IOT was postponed again from 30 April – 28 June 2001 to 13 August – 12 October 2001 because of safety shortcomings. The ESIT-2 was postponed from 4-15 December 2000 to 9-20 April 2001. The revised restructure plan fully qualified, evaluated, and demonstrated the adequacy of modifications to the system in preparation for the IOT&E and ultimately the production decision.

The FRP DR Integrated Test Program Schedule (Figure 2-1, below) begins with the FY01 SIT event leading to the FRP DR and provides for Post FRP DR testing.

APPENDIX C

M270A1 FIELDING SCHEDULE



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